

Rock Products and BUILDING MATERIALS

INCORPORATING DEALERS BUILDING MATERIAL RECORD

Volume XV.

CHICAGO, ILL., DECEMBER 22, 1914.

Number 4.

CAROLINA PORTLAND CEMENT COMPANY

We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydratine's" waterproofing material. "Universal," "Acme" and "Electroid" Brands Ready Roofing. Get our prices.

Charleston, S. C. Birmingham, Ala. Atlanta, Ga. New Orleans, La.

DEXTER Portland Cement
THE NEW STANDARD

Sole Agents **SAMUEL H. FRENCH & CO.** Philadelphia



Phoenix Portland Cement UNEXCELLED FOR ALL USES
Manufactured by
PHOENIX PORTLAND CEMENT CO.
NAZARETH, PA.

Sole Selling Agent, **WILLIAM G. HARTMAN & CO.**
Local Estate Trust Building, PHILADELPHIA, PENNSYLVANIA.

INDIANAPOLIS CABLE EXCAVATOR CO.

Beauty Avenue and New York Street Indianapolis, Indiana

NEGLEY PATENTED EXCAVATORS

LELAND EQUIPMENT COMPANY

126-128 Pine Street San Francisco, Calif.
Agents for Arizona, California and Nevada

CHAS. T. TOPPING MACHINERY COMPANY

Agents for Western Penna. and W. Va. Bessemer Bldg., Pittsburgh, Penna.

FIRE BRICK "MOUNT SAVAGE." None Better.
FLUE LININGS of FIRE CLAY
FIRE PROOFING "REFRACTO" thoroughly dependable for boiler work and general purposes.
THERMIC FIRE CLAY
HOLLOW TILE for both partition and outside use.

Union Mining Company

GENERAL OFFICES

1113-1117 Fidelity Building, BALTIMORE, MD.

Manufacturing Plants: Mount Savage, MD.

DO YOU SELL?



"Strongest Keene Cement Known"

A Better Plastering Material

WRITE FOR BOOKLET AND PRICES

AMERICAN KEENE CEMENT COMPANY
Sigurd, Utah

SPECIAL FEATURES OF THIS NUMBER

A. R. B. A. Convention Draws Thousands	Page 22
Face Brick Men Meet in Separate and Joint Sessions	" 24
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Producing Sand and Gravel for Philadelphia Market	" 41
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Sand-Lime Brick Meeting	" 47

THIRTY YEARS OF EXPERIENCE IS
BEHIND EVERY BARREL OF
The Old Reliable

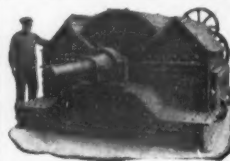
Giant Portland Cement

A RECORD IN LONG TIME TESTS, UNEQUALLED BY OTHER
BRANDS OR LARGER OUTPUTS.

Let us show you.

Giant Portland Cement Co.

6th Floor Pennsylvania Building
Philadelphia



"PENNSYLVANIA"

Hammer Crushers For Crushing and Pulverizing Lime,
Limestone, Gypsum, Marl, Shale, Etc.
Main Frame of Steel, "Ball and Socket" self aligning Bearings; Forged Steel Shaft; Steel Wear Liners; Cage adjustable by hand wheel while Crusher is running.
No other hammer Crusher has such a big Safety Factor.

Pennsylvania Crusher Co.
New York PHILADELPHIA Pittsburgh

BACON \ FARREL ORE & ROCK CRUSHING \ WORLD KNOWN ROLLS-CRUSHERS

EARLE C. BACON, ENGINEER
HAYMEYER BUILDING, NEW YORK



VULCANITE PORTLAND CEMENT CO.

LAND TITLE BUILDING
PHILADELPHIA

200 FIFTH AVENUE
NEW YORK

We have an answer to one of your problems:—

Nearly every manufacturer has some extra machinery and equipment in his plant that is useless to him, which he particularly wishes to dispose of in a hurry.

It would not be worth the time or trouble to spend much energy seeking such a market—and that is where we can help you—thru the classified department of **ROCK PRODUCTS AND BUILDING MATERIALS**. We place your "want" under its proper classification on a page where all the other manufacturers, contractors, dealers and others will see it and read it—and we do this at a normal cost to you.

Why not draw up a list such as we have suggested and mail to us to-day? We will not only co-operate with you in every way, but will be able to show you some "real money" where you now have a "white elephant."

Rock Products & Building Materials

Classified Advertising Department



Clyde Hydrator with Hood
"The common sense way"

SIMPLICITY IS THE KEYNOTE OF SUCCESS

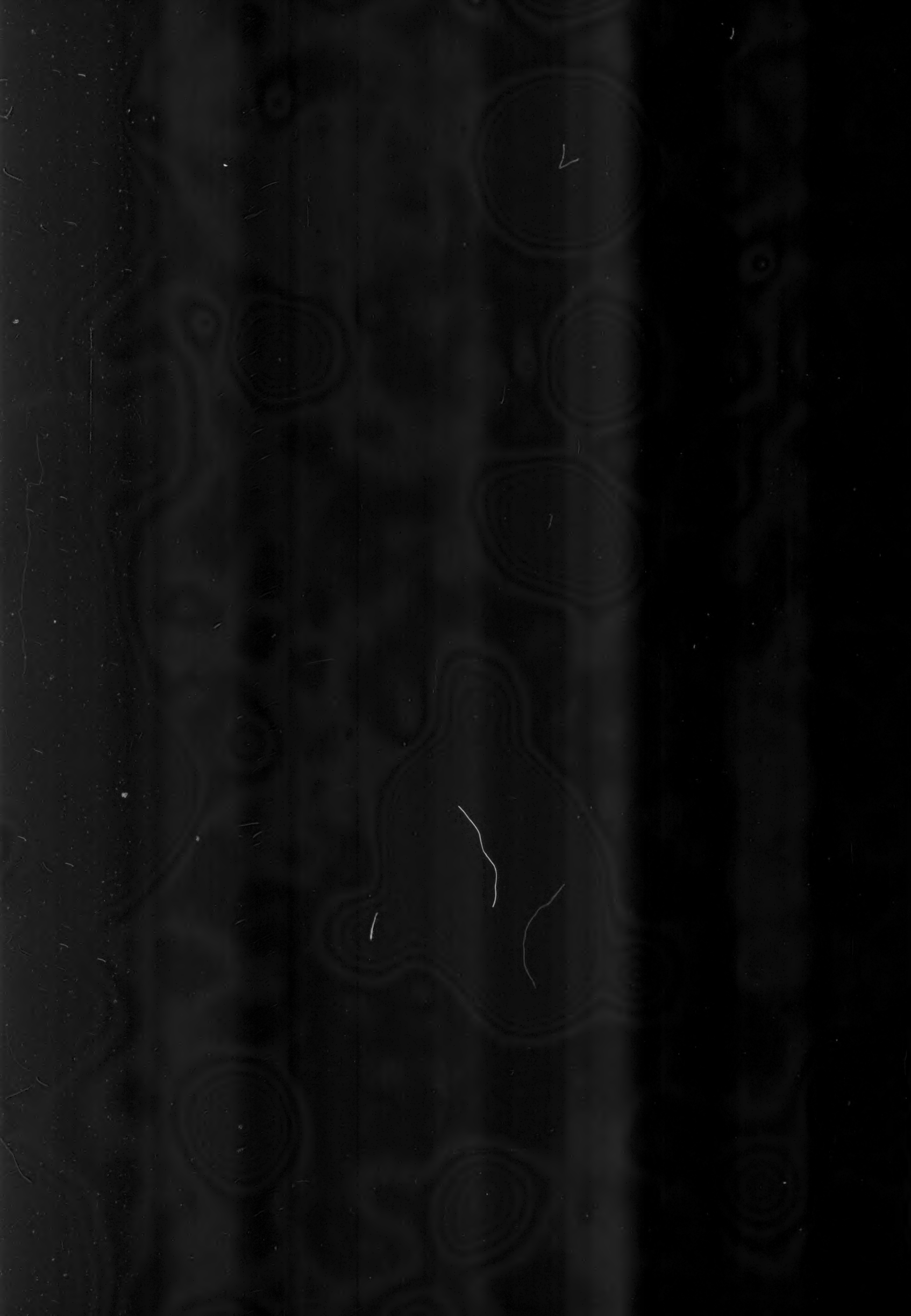
IT does not take a "master mind" to install a CLYDE Hydrating plant, nor does it take a "high priced" engineer to run one. If **YOU**, Mr. Lime Manufacturer, realized how simple it is to obtain a PERFECT HYDRATE, with the CLYDE HYDRATOR you would place your order with us by FIRST MAIL. Write us today—NOW, and let us explain to you what CLYDE PROCESS hydrated lime is and how to obtain the best results, then

Use your own judgment—it's up to you

H. MISCAMPBELL, Duluth, Minn.

Patentee and Sole Manufacturer

Tell 'em you saw it in **ROCK PRODUCTS AND BUILDING MATERIALS**



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NEW
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Troy Reversibles



Applying Fine Points to Rough Work

Every Troy Reversible has a steering device like that on a motor car, at each end.

Every wheel is separately pivoted and travels in a line exactly parallel with the engine pull. This saves horse power because it prevents skidding.

No matter what kind of road your train is on, your horse power pulls straight—not around a corner as it must if your wagons have fifth wheels.

If there is an obstruction in the wheel-track, the wheel that meets it

gets over it without sending the shock to all the other wheels and thus wasting horse power in whipping.

Every wheel on a Troy Reversible is built for light draught and has a capacity of 10,000 pounds.

Every coupling on Troy Reversibles is scientifically designed to provide flexibility between units.

Every Troy Reversible tracks with the motive power. This enables a long train to be pulled safely through narrow passages and around sharp corners.

Write For Inside Facts

It's hard for you to raise your prices but it's easy to reduce your costs. Hauling expense comes down and volume of deliveries goes up when you work with the train of Troy Reversibles.

Designed right, built right and sold right with every point of construction backed by engineering knowledge, a train of Troy Reversibles puts the up-to-date contractor in line for more contracts per season and more profit per contract.

Proofs by performance are shown in our booklet "Inside Facts," which we send only on request. Fill out the coupon and mail it today for your copy.

The Troy Wagon Works Company

Troy, Miami County, Ohio

NEW YORK
50 Church St.

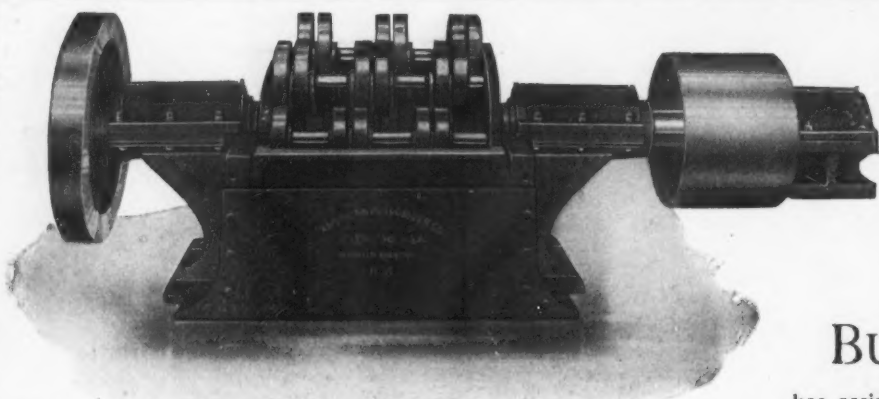
CHICAGO
14 E. Jackson Blvd.

DETROIT
319 Hammond Bldg.

WASHINGTON, D. C.
505 Riggs Bldg.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

THE TROY WAGON WORKS CO., Troy, Miami County, Ohio
Send a copy of "Inside Facts" to
NAME _____
No. _____
City _____ State _____ Street _____
Rock Prod. 12-2214.



**Business has been
good and is
improving**

ROCK PRODUCTS AND BUILDING MATERIALS

has assisted in making the following more recent sales:—

Alabama Graphite Co.
Hunkins-Willis Lime and Cement Co.
Blowers Lime & Phosphate Co.
Campbell Stone Co.

Northern Lime Co.
Aluminum Co., Of America (Three Machines)
Haes & Eggers, (Australia)
Hooven, Owens, Rentschler Co.

National Sewer Pipe Co.
Richard C. Remmey Son Fire Clay Co.
The Ohio C. Barber Fertilizer Co.

Mr. A. E. Frisbie of Tennessee, states he wrote for our American Ring Pulverizer three years ago, found price too high — tried two other types of machines, both failed — has now ordered an

AMERICAN RING PULVERIZER

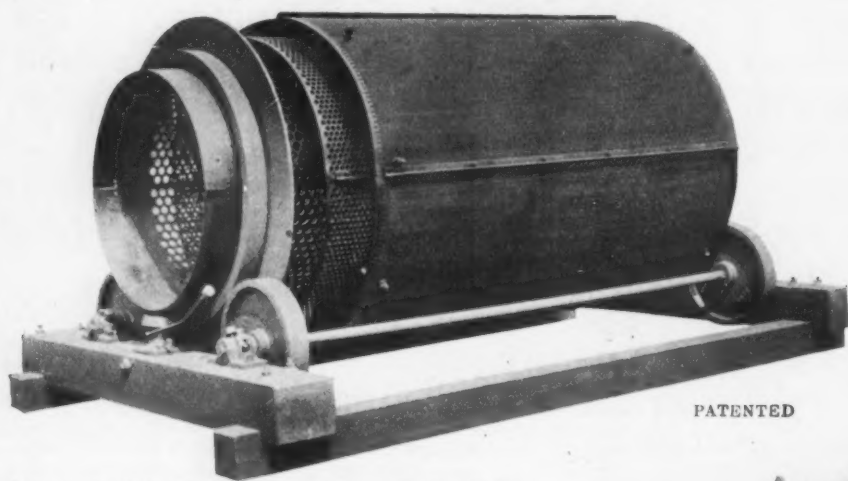
because it is the best and cheapest machine.

WRITE FOR PARTICULARS

AMERICAN PULVERIZER COMPANY

31st & Ridge Streets

East St. Louis, Ill.

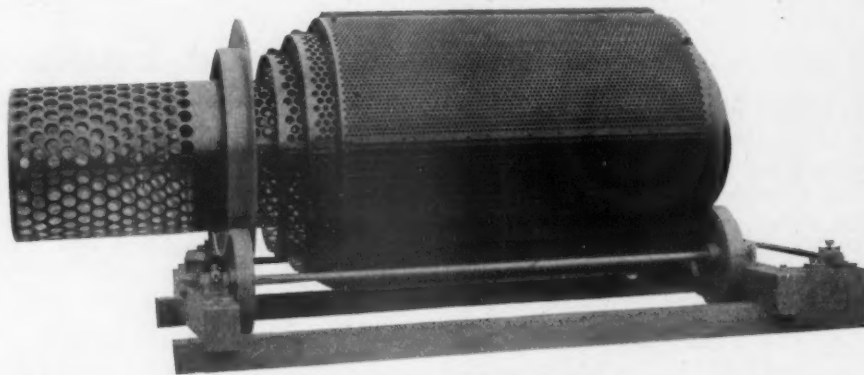


PATENTED

Inner perforated cylinder of above screen, 4 ft. dia. x 12 ft. long, to which can be attached EXTENSION cylinder as shown below.

It's a money saver in cost,
space, power and repairs
and it does the work right

JOHNSTON & CHAPMAN CO.
2930 Carroll Avenue, CHICAGO



Made in several sizes to suit requirements.

They all say
"ITS THE BEST SCREEN"

Experienced crusher men in
nearly every state find the
O'LAUGHLIN Screen an
economy in handling stone

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

OUR MILLS PULVERIZE ALL REFRACTORY MATERIALS

Cement Rock—Cement Clinker—Furnace Slag—Flint Clays—Gypsum—
Phosphate Rocks—Chrome Ore—Hydrated Lime—Borite—Bones—Fullers
Earth—Coal—Slate—Limestone and other materials too numerous to
mention.

TO ANY FINENESS DESIRED WITHOUT USE OF COMPLICATED AIR SEPARATING DEVICES OR AUXILIARY SCREENS.

THE GIANT GRIFFIN MILL—For exceptionally fine finished Product.

THE BRADLEY HERCULES MILL—For pulverizing materials—50% thru 100 mesh sieve where large output is desired. An especially efficient preliminary pulverizer.

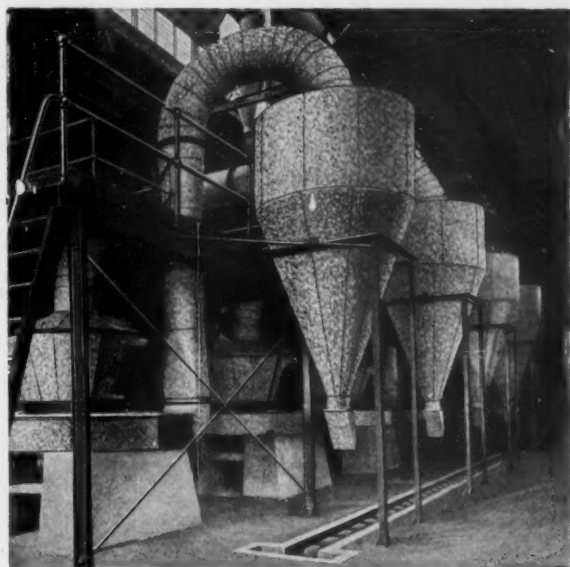
THE BRADLEY THREE ROLL MILL—For pulverizing—Phosphate Rocks—Limestone for Agricultural Purposes—Gypsum—Flint Clay, etc.

There is a Bradley Mill Suitable for Most Every Purpose

Send us full information on Your Grinding Proposition and we will be glad to suggest Proper Grinding Mill for Your Particular Use

BRADLEY PULVERIZER CO., BOSTON
BERLIN, LONDON

"A Little Knowledge is a Dangerous Thing"



The Raymond System in a Big Cement Plant

When a man knows something about a given subject, he is apt to conclude that he knows **all** about it. Knowing **all** about anything is quite an achievement in itself.

One of the things that prevents more manufacturers from profiting by the use of the

RAYMOND PULVERIZING-AIR SEPARATING SYSTEM

is that they judge of its value to **them** from **partial** information.

It is not surprising that there should be considerable **general** knowledge of the Raymond System. Its wide use for many years would produce this result.

But, the very value of the Raymond System to **you** is in the fact that it may be specially adapted to your special conditions. It is **general** in principle only. It is **specific** in its application.

And the only way you can know with **certainty** how valuable the Raymond System may be to **you**, is to consider it in its detailed applications to **your** material and **your** factory conditions.

And there is where we can help you.

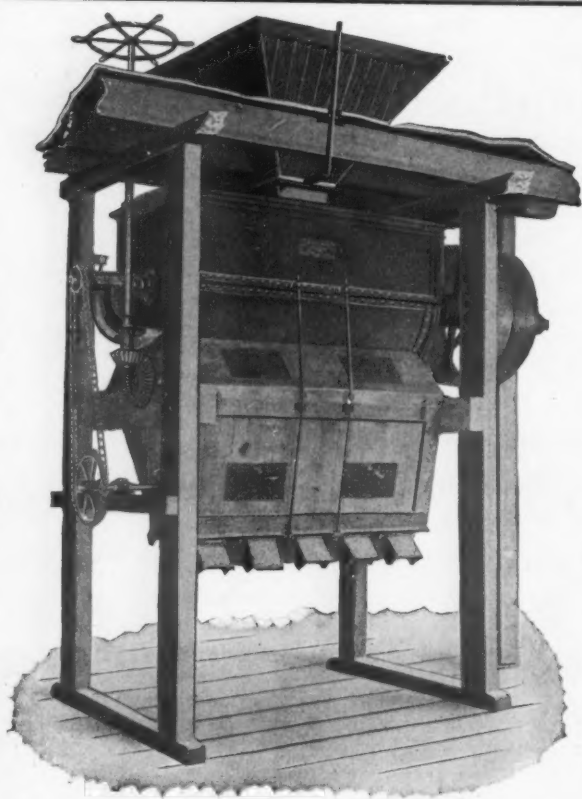
Tell us what material you grind or separate, and how fine you want your product, and **maybe** we can tell you something which will prove very much to your profit.

We have done just that and proven our case for a lot of manufacturers who grind and separate all sorts of materials. And those manufacturers are mighty glad we did it. And they'll tell you so.

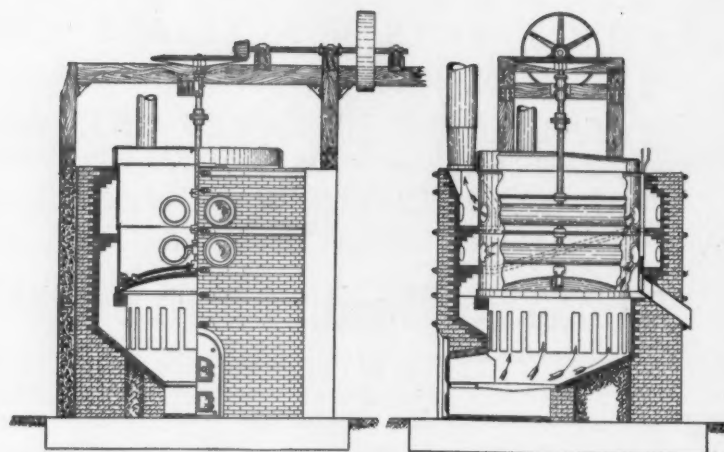
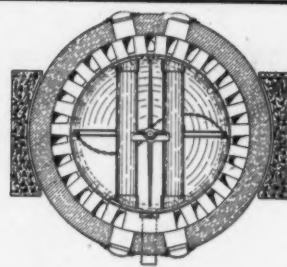
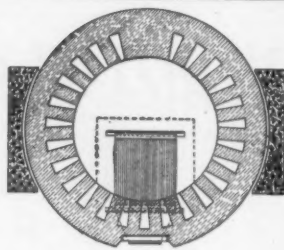
We design special machinery and methods for Pulverizing, Grinding, Separating and conveying all powdered products. We manufacture Automatic Pulverizers, Roller Mills, Vacuum Air Separators, Crushers, Special Exhaust Fans and Dust Collectors. . . . SEND FOR THE BOOK

Cut out this Coupon as a Reminder to Write
RAYMOND BROTHERS, Impact Pulverizer Company
1301 North Branch Street, CHICAGO
about the Raymond System of Grinding and Separating

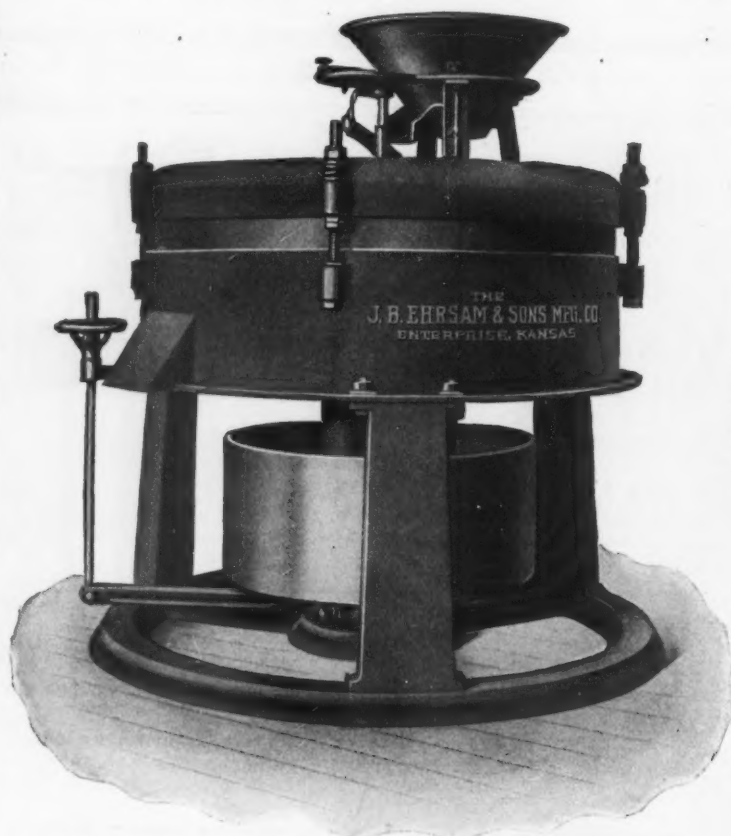
Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



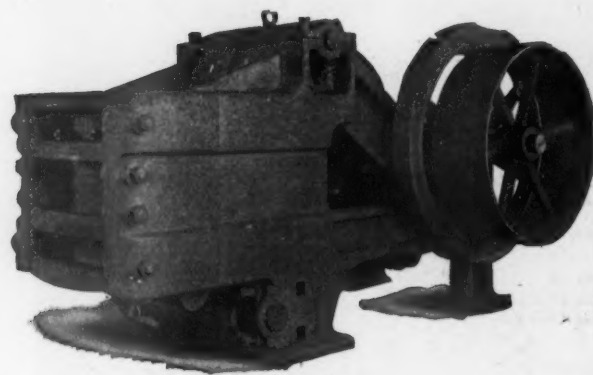
Enterprise Noiseless Mixer



Ehram Calcining Kettles—Built in 5 sizes—6-8-10-12-14 feet in diameter, having capacity of from 3 tons to 20 tons to the charge



Horizontal and Vertical Heavy Duty Grinding Mills



Jaw Crushers Built in all sizes up to 24" x 34" jaw opening. Rotary Fine Crushers in sizes up to 42" inside diameter.

The J. B. Ehram & Sons Mfg. Co., ENTERPRISE, KANSAS

Manufacturers of Plaster Mill Machinery, Conveying, Elevating and Power Transmission Appliances

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

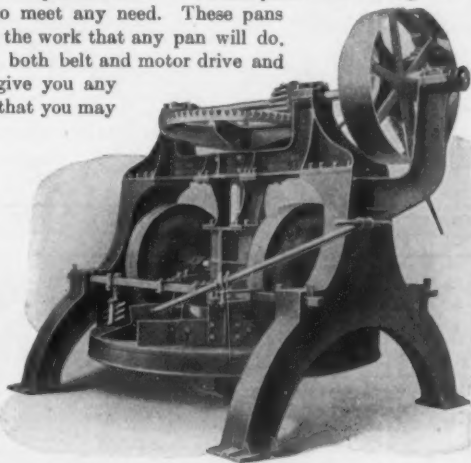
YOUR PAN NEEDS

THIS pan is the identical pan required for your plant and it should speak to you convincingly of our pan quality. It has put many Sand-Lime Brick Plants on a paying basis and will make money for you. There is no line of pans made which will compare with the "Built Right, Run Right" line and your needs can be fully taken care of from our peerless line. We build pans with a range in size and capacity to meet any need. These pans are adapted for all the work that any pan will do. We have them in both belt and motor drive and will be pleased to give you any points on our pans that you may inquire about.

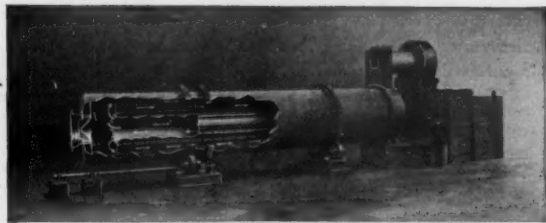
A poor pan is an expensive proposition. Its inefficiency shows in the quality of your product and the size of your repair bills. It also limits your capacity by handicapping the rest of the equipment. Real economy would suggest that your pans be the best possible. We will be pleased to talk pans or any other equipment with you.

*We Build Complete Equipments for
Sand-Lime and Clay Brick Plants*

The American Clay Machinery Co.
Willoughby, Ohio, U. S. A.



SPECIALISTS IN THE DRYING FIELD FOR THE LAST 16 YEARS



Section showing direction gases pass thru the dryer.

RUGGLES-COLES "DOUBLE SHELL" DRYERS

are used in all parts of the world, there being more than 400 installations. Over half a hundred are used for drying sand and gypsum at plaster, brick and cement plants.

We build six regular types of dryers, but for special work we build machines to order.

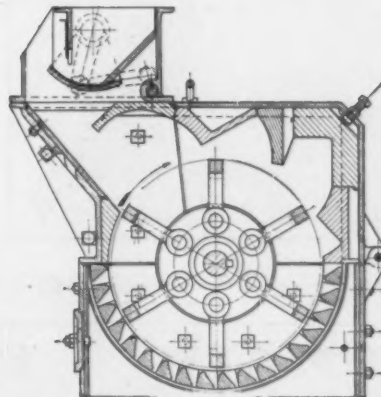
Book "What We Dry" will interest you.

Ruggles-Coles Engineering Co.

CHICAGO OFFICE
McCormick Building

50 Church Street
NEW YORK

Pulverators



Cross Section of Allis-Chalmers Pulverator (Patented)

Pulverizing by a New Principle

**Note that Involute Curve
The Direction of Rotation**

Advise us your requirements concerning capacity
and fineness wanted

Forward Sample of Your Material

Complete Rock Crushing Plants and Cement Mills—
Power Plants—Electric Motors

**Allis-Chalmers
Manufacturing Company**

OFFICES IN ALL PRINCIPAL CITIES

MILWAUKEE,

WISCONSIN.

For All Canadian Business Refer to Canadian Allis-Chalmers, Ltd., Toronto, Ont.

FOREIGN REPRESENTATIVES:—Frank R. Perrot, 893 Hay St., Perth, W. A.
Frank R. Perrot, 204 Clarence St., Sydney, N. S. W. Mark R. Lamb, 87
Galeria Beeche, Muerfano 1157, Santiago, Chile. H. I. Keen, 733 Salisbury
House, London Wall, E. C. London, England. American Trading Co., Repre-
sentative in Japan, South America, China and Philippine Islands. Herbert
Ainsworth, Johannesburg, So. Africa.



"HERCULES"

For underground masonry,
cisterns, reservoirs, pits, coal
and grain pockets.

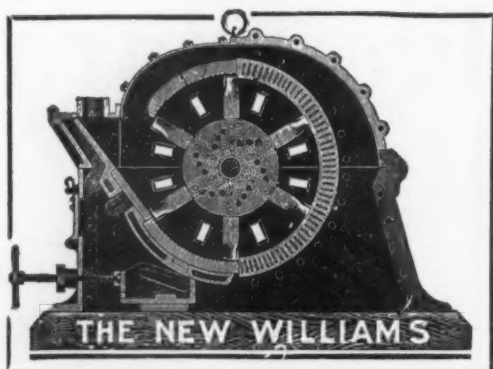
Watertight, sanitary, hard
and dustless floors.

Used with sand and cement to
produce a waterproof mortar which
will bond perfectly to new or old masonry and
permanently waterproof, even if plastered on
the inside of a cellar, where the water pres-
sure is outside.

Hercules Colored Coatings; Plaster-bond and
Damp-proofing Mastic.

WATERPROOFING
HERCULES WATERPROOF CEMENT CO.
BUFFALO, NEW YORK

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



Without Screening or Separating
THE WILLIAMS UNIVERSAL FINE GRINDER
 on dry limestone will produce a product
95%—30 Mesh—60%—100 Mesh

The Williams New Universal Fine Grinder is the only machine having a really adjustable grinding plate. This adjustable plate insures uniformity of product at all times, minimizes repairs, and lengthens the life of hammers fully 50%, allowing from 2½" to 4" more wear off the hammers than would otherwise be possible.

The Williams New Universal Fine Grinder will take 1½", 2", 2½" Dry Limestone and in one operation without the use of screens or separators produce a uniform fine product, something no other machine on the market can accomplish. It will do this with the minimum expense for maintenance and power.

Detail description and illustrations of this machine will be found in our Catalog No. 4, which will be sent to all interested parties on request. Investigate this machine NOW—it will be worth your while. A statement from you as to nature of material to be handled, original size, size product desired, and quantity per hour will enable us to make proper recommendations.

The Williams Patent Crusher & Pulverizer Co.

Works: St. Louis, Mo. General Sales Dept.—Old Colony Bldg., Chicago, Ill. San Francisco: 268 Market St.

AUTOMATIC WEIGHING MACHINE COMPANY

High Grade Automatic Scales

Main Office and Factory, NEWARK, N. J., No. 134-140 Commerce St.

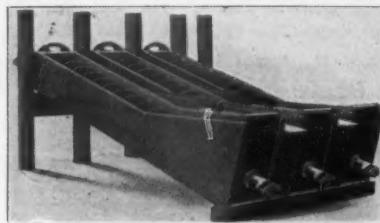
Agency, Detroit, Mich., 28 Woodbridge St., East

DON'T FORGET

The Cement Show will soon be here.

Have you secured advantageous space in the DAILY?

More efficacious this year than ever.



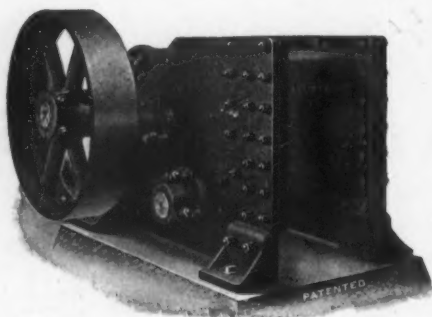
Sand Washers

LEWISTOWN FOUNDRY & MACHINE CO. Lewistown, Pa.

Builders of heavy duty crushers and glass sand machinery.

Glass sand plants equipped complete

Write for prices and catalog



STURTEVANT MACHINERY

CRUSHERS

GRINDERS

SCREENS

Thirty Years of Practical Experience has taught us that no one machine is adapted to all purposes. Customers expect correctly designed machines for their special work. Our large line enables one to select properly. It consists of:

CRUSHERS—For coarse, medium and fine work on hard or soft rock. Jaw,

Rotary and Hammer design.

CRUSHING ROLLS—Coarse, medium and fine. Hard or soft rock,—wet or dry.

TRI-ROLL MILLS—For medium crushing, giving Two Roll Reductions.

RING-ROLL MILLS—For pulverizing hard materials.

EMERY MILLS and HAMMER-BAR MILLS—For pulverizing softer materials.

SCREENS—Inclined Vibrating and Rotary for fine or coarse work—wet or dry.

Sampling Crushers, Rolls, Grinders and Screens.

Send for Catalogue.

STURTEVANT MILL CO., BOSTON, MASS.

NEW YORK CHICAGO

DENVER PITTSBURGH

VICTORIA, B. C. LONDON ENG.

Red, Brown, Buff and Black



**MORTAR
COLORS**

The Strongest and
Most Economical
in the Market.



Our Metallic Paints and Mortar Colors are unsurpassed in strength, fineness, and body, durability, covering power and permanency of color. Write for samples and quotations.

CHATTANOOGA PAINT CO.

Chattanooga, Tennessee

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

WHEN YOU ABSOLUTELY KNOW THAT

Ricketson's Mortar Colors

are pure and brilliant in tone, economical in application and a permanent guarantee against fading and washing

Why not INSIST on having them?

They are the acknowledged best for all uses—Mortar, Brick, Cement, Concrete and stone. Red, Brown, Buff, Purple and Black.



RICKETSON MINERAL PAINT WORKS, MILWAUKEE, WIS.



AUSTIN GYRATORY CRUSHERS

Made in Eight Sizes

50 to 5000 Tons Per Day

Plans and Specifications submitted and expert advice free on any problems involving rock-crushing or earth-handling.

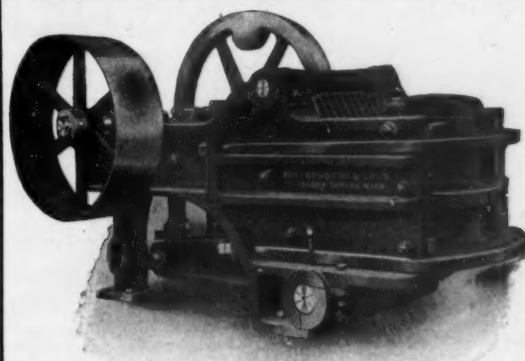
AUSTIN MANUFACTURING CO.

New York Office: 50 CHURCH STREET

CHICAGO

Canadian Agents: MUSSENS, Ltd., Montreal

We manufacture:—Road and Elevating Graders, Scarifiers, Road Rollers, Quarry Cars, Dump Wagons, Stone Spreaders, Street Cleaning Machinery.



Jaw and Rotary CRUSHERS

For all Rocks and Ores Softer than Granite

GYPSUM MACHINERY—We design modern Plaster Mills and make all necessary Machinery, including Kettles, Nippers, Crackers, Buhrs, Screens, Elevators, Shafting, etc.

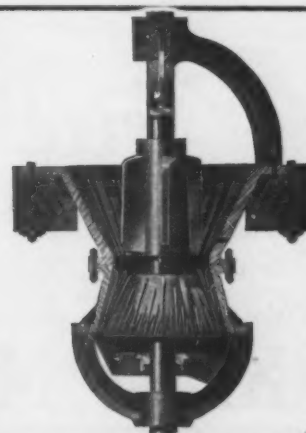
Special Crusher-Grinders for Lime

Butterworth & Lowe

17 Huron Street,

Grand Rapids, Mich.

Nippers—17 x 19", 18 x 26", 20 x 30", 24 x 36" and 26 x 42"



Crackers—6 sizes—many variations.



The Grinding is Finished in one Operation

All working parts can be removed and replaced without disturbing belts, feeder, etc.

BONNOT PULVERIZER

Grinds and Screens Limestone, Raw Lime and Hydrated Lime

Does it at One Operation. Gives You Any Desired Fineness

GRINDING LIME IS LARGELY A SCREENING PROPOSITION. THE BONNOT PULVERIZER HAS THE LARGEST SCREENING SURFACE AND CONSEQUENTLY THE GREATEST CAPACITY.

NO OTHER MACHINE LIKE IT IN THE ACCESSIBILITY OF SCREEN AND GRINDING PARTS.

No. 4 Catalog Explains These Advantages

THE BONNOT COMPANY

909 N. Y. Life Bldg.
KANSAS CITY, MO.

CANTON, OHIO

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



MAXECON

Means MAXimum of ECONomy

Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY, Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

WE DO NOT CLAIM ALL of the CREDIT for this achievement

We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp.), Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co., Western P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co., Castalia P. C. Co., Pennsylvania P. C. Co., and many other patrons.

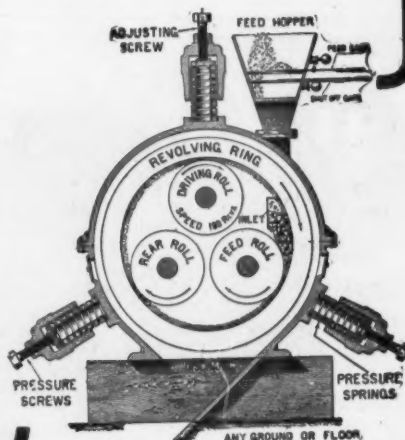
THE RING WOBBLES

The FREE WOBBLING POUNDING RING instantly and Automatically ADAPTS its position to the variations of work.

Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.

KENT MILL CO.

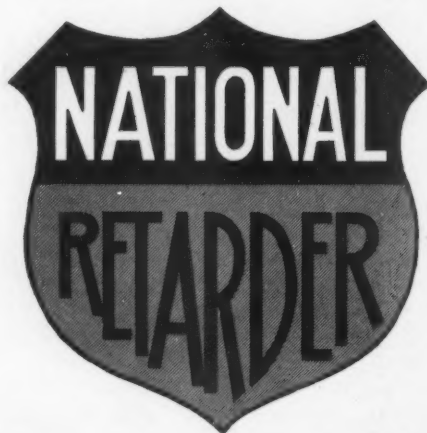
10 RAPELYEA ST., BOROUGH OF BROOKLYN, N. Y. CITY
LONDON, W. C., 31 HIGH HOLBORN
BERLIN-HOHENSCHOENHAUSEN



JUST A CHANGE IN OFFICE ADDRESS

We assure you the same prompt service and excellent quality of product

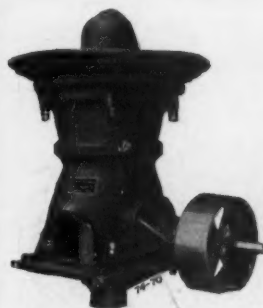
Eastern Plant
PORT CLINTON
OHIO



Western Plant
WEBSTER CITY
IOWA

THE NATIONAL RETARDER COMPANY
930 North Halsted Street, CHICAGO, ILL.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



McCully Gyratory Crusher

has perfect suspension for main shaft, removable countershaft bearing and steel gears.

Efficient oiling devices, great strength and simple construction give a perfect rolling motion that minimizes power consumption and possibility of breakage. Described and illustrated in Bulletin PM-4-58.

Rock Crushers

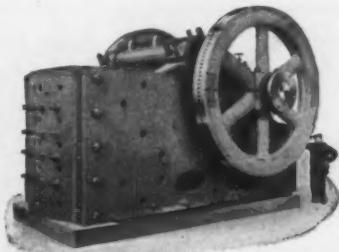
The largest crusher in the world operating on trap rock is a

Superior Jaw Crusher

Installed March, 1910, in the quarries of the Birdboro Stone Co., Birdboro, Pa. It produces 3500 to 4000 tons per day.

Built in the following Receiving Opening Sizes: 36"x24"; 42"x40"; 60"x48"; 84"x60". Described in Bulletin PM-4-58.

Write for Bulletin.



Power & Mining Machinery Co.

Works: Cudahy, Wis. New York Office: 115 Broadway

District Offices: Chicago, El Paso, San Francisco, Atlanta.

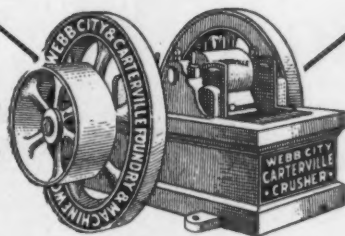
PRINCIPAL PRODUCTS

Rock Crushing Machinery, Mining and Smelting Machinery, Cement Making Machinery, Wood Impregnating Plants, Loomis Petroleum Gas Generators, Suction Gas Producers, Cyanide and General Steel Tank Works, Woodbury Jigging System, Lead Burning. M-277.2

What are Your Resolutions?

January 1, 1915—Have you planned to make any improvements in your plant? If not, you should. Be prepared to handle the increase of business that is sure to come. Don't let the other fellow get the order because you are not in a position to fill it.

**Webb City and
Carterville Fdy.
and Mache. Wks.
WEBB CITY, MO.**



HOISTING rope of every description for elevators, mines, coal hoists, ore hoists, conveyors, derricks and cranes, stump pullers, steam shovels, dredges, skidder rope for logging, ballast, unloading. Towing hawsers, mooring lines, tiller rope, and ship's rigging. Power transmission. Suspension bridge cables. Rope for all haulage purposes. Flattened strand rope. Non-spinning rope. Steel clad rope. Locked coil track cable for aerial tramways. Flat rope.

**Special rope made to order to
suit any purpose.**

American Steel & Wire Company

Chicago, New York, Worcester, Cleveland, Pittsburgh, Denver,
Export Representative: U. S. Steel Products Co., New York.
Pacific Coast Representative: U. S. Steel Products Co., San Francisco, Los Angeles, Portland, Seattle.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



More Than "Plastering Material"

Your sales are not confined to any one trade or any one class of work when you handle

Tiger Brand Hydrated Lime

Here for instance is a building where the dealer sold Tiger Brand for scratch, brown and white coat plastering, also for use with the cement in bricklaying and as a waterproofing for the concrete foundation.

Every day brings new uses and new customers for Tiger Brand.

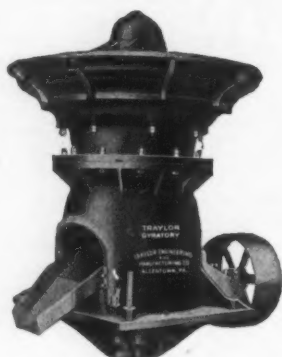
KELLEY ISLAND LIME & TRANSPORT CO., CLEVELAND, OHIO



NATIONAL GUARD ARMORY, YORK, PA.

Traylor Gyratory Crushers

All Sizes, No. 1 to No. 24 :: All Capacities on Any Rock



Correct design proven after years of experience and investigation. Embodies many superior features. High grade material and workmanship. Send for illustrated catalog "G-2" giving complete details.

TRAYLOR ENG. & MFG. COMPANY

Main Office & Works: Allentown, Pa.

N. Y. Office, 24 Church Street

Western Office, Salt Lake City



This is what you want in Hydrated Lime, Mr. Dealer

Lime that is perfectly slaked, of extreme fineness, that is positively guaranteed not to "pop."

Monarch Hydrated Lime is of absolute uniformity, no underburned or overburned lime to be eliminated.

It's a pleasure to dealers to recommend this well known Brand. It means more business, more calls for Monarch Brand, More Profits for you.

Monarch publicity service is a new aid to you in selling and creating a call for Monarch Hydrated Lime. Be a Monarch Man. Write us today.

National Lime & Stone Co.
CAREY, OHIO

BANNER HYDRATE LIME

is best for

MASON WORK and PLASTERING

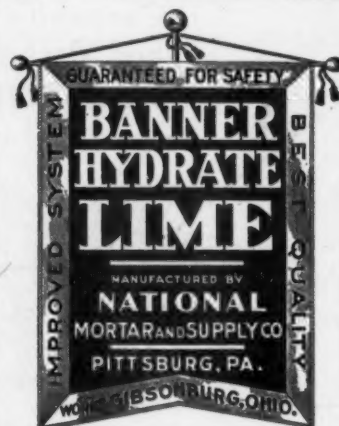
Sold to Dealers only

FOR INFORMATION APPLY TO

NATIONAL MORTAR AND SUPPLY CO.

A. H. LAUMAN, President

PITTSBURGH, PA.



Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



"Two or three of the leading manufacturers now produce their hydrate under chemical control. The process of hydration, no matter what machinery is employed, is carefully guarded by skillful chemists"

Extract from—THE JOURNAL OF LIME PRODUCTS.

We Are One of the Manufacturers

The selection of the rock, the burning of the lime and the hydration are given the closest attention in the manufacture of

MITCHELL HYDRATED LIME

With the most modern and best equipped lime hydrating plant in the country we complete the process of a perfect hydrate by making a product controlled by experts. That is why our hydrate made good. It is a superior product.

One of the largest manufacturing concerns of its kind in the United States writes us:

"With reference to your hydrated lime. We have found the same satisfactory and have advised the local dealer to this effect so that he can arrange for a stock to cover our regular requirements."

We want dealers whose trade demands a particularly high grade quality to handle our hydrate. Write us to day.

MITCHELL LIME CO., 1515 CONSUMERS BUILDING **CHICAGO, ILL.**
Works: Mitchell, Indiana

The Ohio and Western Lime Company

WORKS AT
Huntington, Indiana
Marion, O.
Gibsonburg, Ohio
Festoria, Ohio
Sugar Ridge, Ohio
Tiffin, Ohio
Genoa, O.
Limestone, Ohio
Lime City, Ohio
Portage, Ohio
Lucky, Ohio
Bedford, Ind.

MANUFACTURERS OF AND WHOLESALE DEALERS IN

Ohio and Indiana White Finishing Lime, Ground
Lime, Lump Lime, Fertilizer Lime, Hydrate
Lime, Cement, Plaster, Hair, Etc., Etc.

Capacity
8000 Barrels
Per Day

MAIN OFFICE: Huntington, Ind. **Branch Office:** Marion, Ohio.

IF IT IS
LIME
WE MAKE IT
(STRONGEST IN OHIO)

BULK and Barreled :- "MASON'S HYDRATE"—For Brick-work, plastering and masonry. :- "LIME FLOUR"—Hydrated Finishing Lime—Best on the market. :- "CLOVER GROWER"—Land restorer, for the farmer—none better. :- "CARBO HYDRATE"—Soil sweetener—crop producer. :- Prompt shipments. :- A dealer wanted in every town. :- **WRITE OR PHONE FOR PRICES.**

The Scioto Lime and Stone Co.
Delaware, Ohio

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

The Largest Floating Gravel Washing Plant in The World



This plant is owned by E. T. Slider, of New Albany, Ind.

The entire arrangement was designed by us and the plant equipped with our gravel handling and washing machinery. The plant is strictly up-to-date in every respect and the owner has made every effort to install only the very best equipment on the market.

We can give you just as good a plant to suit your special case. Why not put your problem up to us?

Write for "Plants for Washing Sand and Gravel"

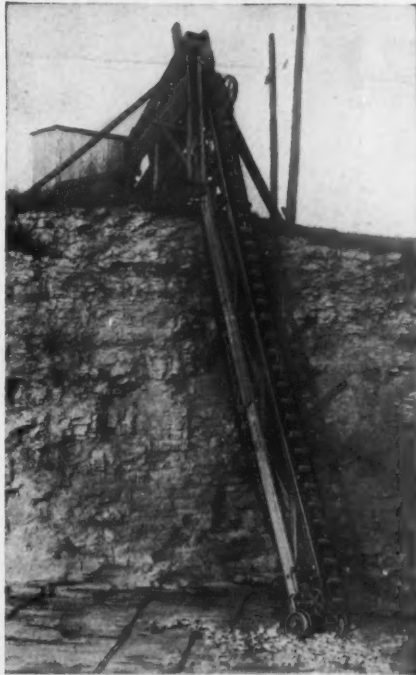
The Raymond W. Dull Company

1910-12 Conway Building

CHICAGO, ILLINOIS

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

WEBSTER ELEVATORS



Portable Outfit for Small Stone from Quarry to Car

For Handling All Rock Products

From Pit and Quarry
to Point of Final Use

Stone Crushing Plants
Lime and Hydrate
Sand and Gravel
Phosphate Works

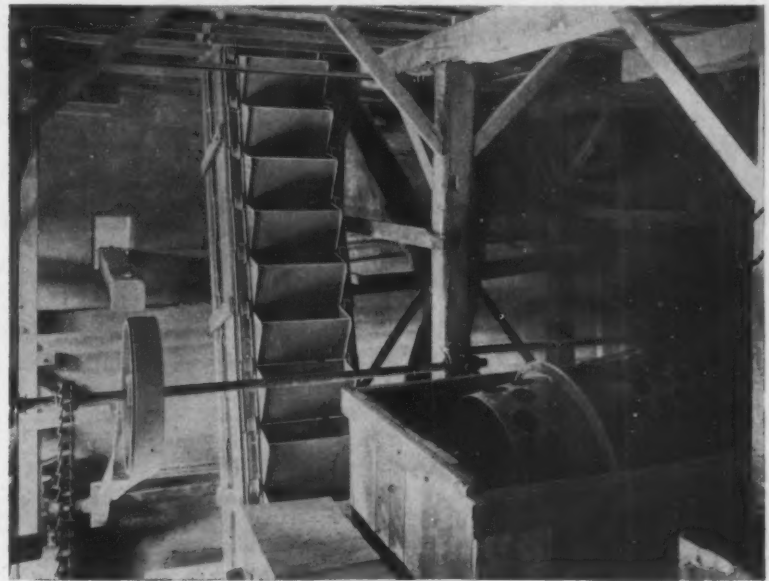
Standard and Special
"Webster Method"
Types for Every Service



Temporary Setting for Car Loading on
Construction Work

Buckets of Malleable Iron and Steel, attached to Belt or Chain, single or double, as conditions dictate.

We suit both the requirements of your work and the limitations of your purse.



Two Stone Crushing Plants Using Webster Elevators of Continuous Steel Buckets on Two Strands of Steel Bar Link Roller Chain With Track Guides Up and Down

The Webster M'f'g Company, Tiffin, Ohio

Philadelphia, Pa. Chas. Bond Co., 520 Arch St.
Pittsburgh, Pa. Dempcy-Degener Co., 14 Wood St.
Detroit, Mich. Palmer-Dee Co., Woodward Ave.
Charleston, W. Va. C. L. Miller, 1511 Virginia St.
Middleborough, Ky. Webster & Co.
Louisville, Ky. E. D. Morton & Co., 516 W. Main St.
Knoxville, Tenn. Webster & Co., Halston Bank Bldg.

Chicago McCormick Bldg.

New York 90 West St.

(78)

Birmingham, Ala. Carpenter & Hillman, 707 Empire Bldg.
Douglas, Ark. L. W. Mendenhall, 1019 Avenue G.
Denver, Colo. C. L. Dean, 1718 California St.
Salt Lake City, Utah Utah Engineering & Machinery Co.
Los Angeles, Calif. California Machy. & Equip. Co., 430 S. Broadway.
Seattle, Wash. Brinkley Supply Co., 524 First Ave. South.
Vancouver, B. C. B. C. Equipment Co., Bank of Ottawa Bldg.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

HYDRATED LIME

Its Marvelous Increase In Consumption

The Kritzer Service

Any lime can be successfully hydrated by our process; but whether your lime can be hydrated and successfully marketed is another question. We study your proposition and the possibilities of its commercial success, and advise you accordingly. Our ten years' experience in the business is a valuable assistance in this. Ours is not a mail order proposition. We investigate our customers' proposed plant thoroughly before we will enter into a contract with them. We turn down more prospects than we advise to go into the business. We can't afford to have any failures. Our customers' success is our success.

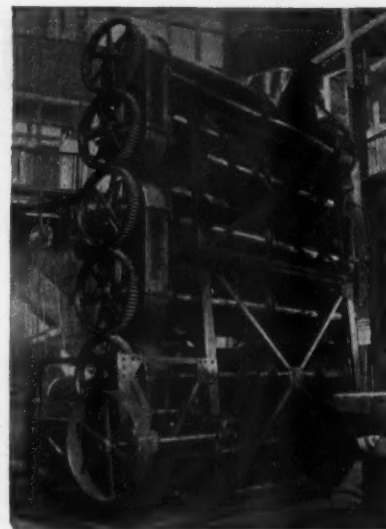
WRITE TO US

Are You Meeting the Increasing Demand for Hydrated Lime?

There is nothing forced or unnatural about the growing popularity of this product. It is a natural growth resulting from a widespread awakening to the advantages of Hydrated Lime for a variety of uses—as waterproofing for Concrete, in wall plaster, and in almost every case where lime is called for. In hydrated form it is weatherproof, more easily handled, and better adapted to modern methods, both of commerce and construction. A continued growth of the demand may therefore be expected.

The Kritzer Way

insures a product which will hold a continued place for itself on the market. We install plants complete, designed by our own expert engineers to meet your local conditions and turn out a uniform grade of Hydrated Lime of the highest standard, and with the greatest economy in cost of production. The Kritzer Continuous Hydrator, and the accessories installed with it, are the recognized standards in this line.



KRITZER CONTINUOUS
PROCESS

THE KRITZER COMPANY Chicago, Ill.

Perfect Lime Burning Economy

has resulted from the use of the

DUFF PATENT

GAS PRODUCER INSTALLATION

This device is in successful and satisfactory operation in the following representative plants:

La Garde Lime & Stone Co., La Garde, Ala.
Ohio & Western Lime Co., Gibsonburg, O.
National Mortar & Supply Co., Gibsonburg, O.
Knickerbocker Lime Co., Philadelphia, Pa.
Dominion Lime Co., Lime Ridge, Quebec.

Installations now being made in other plants.

DUFF PATENTS CO., Inc.
PITTSBURGH - - - PENNSYLVANIA

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

**WE'LL GIVE YOU A
COPY OF THIS BOOK.**



Every contractor, builder, dealer or owner should have a copy of these specifications. They save time and labor, and cover thoroughly every point, having been prepared by experts. To contractors, builders, dealers, etc., we will furnish these booklets FREE. Write us today for a copy which will be mailed to you promptly.



This Lath is ideal for stucco purposes, because it is Self Furring. Mortar will get a perfect clinch when lath is fastened direct to sheathing boards or where passing over wood studs or other obstructions, making a saving in this class of construction of from 4 to 5 cents per square yard over Metal Laths that require furring strips. Sykes' expanded cup metal lath is the best possible for outside or stucco work, but is equally as good for inside work. However, if you prefer a sheet lath, we make—

SYKES TROUGH SHEET LATH, for ceilings, inside walls, mantel and tile setting, etc. Furnished in either anti-rust (oil) coating, painted black or galvanized. Write us for prices and free samples.

SYKES WALL TIES—Standard 7 in. long—Sykes Veneer Wall Ties, 6 in. long; extra heavy, galvanized, with cross corrugation. Free samples.

SYKES CORNER BEADS—6, 7, 8, 9, and 10 feet lengths. Ten pieces to the bundle.

Write us for prices.

**The Sykes Metal Lath
and Roofing Co.**

508 Walnut Street, - NILES, OHIO



Recommend with Confidence

When your customers leave it to you, Mr. Dealer, to suggest a waterproofer for cement—do you recommend with confidence?

Are you able to say "this waterproofer is good stuff—it sure does *waterproof* cement. I *know* you'll get fine results."

That's the way Ceresit Dealers talk to customers who ask their advice upon waterproofing for cement.

They are sure. They recommend Ceresit *knowing* that their customer will be pleased—and that when he has another waterproofing job on hand—he'll come back and say—"Give me Ceresit—the kind you recommended."

Ceresit, Mr. Dealer, is sold on quality. Quality has won it an unparalleled position in the building field. Quality is going to keep it there.

Your customers need Ceresit. You need Ceresit to please your customers—and because Ceresit pays a good margin of profit.

*Write today for our dealer's proposition.
Tie up to Ceresit by January 1st.*

**Ceresit Waterproofing
Company**

924 Westminster Building, Chicago, Ill.



Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



Furniture Exhibition Co. Warehouse, North Pier, Chicago, Ill.
1,300 Ft. Long, 120 Ft. Wide. Henry Ericsson, Contractor.

MEDUSA GRAY PORTLAND CEMENT

Used Throughout for Foundations, Brickwork, Etc.

CELEBRATED FOR ITS UNIFORM COLOR AND STRENGTH
GUARANTEED TO PASS AND SURPASS STANDARD SPECIFICATIONS

Over 100,000 barrels of Medusa Portland Cement
used by the United States Government in the
construction of breakwater at Cleveland, Ohio.

Write for free illustrated booklets and samples of

MEDUSA GRAY PORTLAND CEMENT
MEDUSA WHITE PORTLAND CEMENT
MEDUSA WATERPROOFING
MEDUSA WATERPROOFED CEMENT
(GRAY AND WHITE)

Sandusky Portland Cement Co.

SANDUSKY, OHIO



THE IMPROVED EQUIPMENT CO.

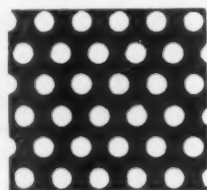
60 Wall Street, New York City

COMBUSTION ENGINEERS

DESIGNERS AND BUILDERS OF

COMPLETE GAS PLANTS GAS BENCHES
LINE BURNING PLANTS GAS PRODUCERS
SPECIAL INDUSTRIAL FURNACES

Read the Classified Advertising
Department in this issue—there
are some important items for
your attention.



"HENDRICK" PERFORATED STEEL SCREENS AND ELEVATOR BUCKETS

—STAND THE TEST—

Let us figure on your requirements.

HENDRICK MFG. CO.

New York Office, 30 Church St.

CARBONDALE, PA.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

DIRECT HEAT DRYERS

FOR

**Bank Sand, Glass Sand,
Rock, Clay, Coal, Etc.**

All Mineral, Animal and Vegetable Matter

We have equipped the largest plants
in existence and our dryers are oper-
ating in all parts of the world. Write
for list of installations and catalogue
—S. C.—

American Process Co.

68 William St., NEW YORK CITY

ROBERT W. HUNT JNO. J. CONE JAS. C. HALLSTED D. W. McNAUGHER

ROBERT W. HUNT & CO., ENGINEERS
INSPECTION CEMENT & REINFORCING STEEL
CHEMICAL AND PHYSICAL TESTING

Office and Laboratories
Chicago, Montreal New York San Francisco Pittsburgh Toronto St. Louis Mexico City London Seattle

**Lime Kilns
Hydrated Lime Plants
Portland Cement Plants**

RICHARD K. MEADE

Chemical, Mechanical and Industrial
Engineer

202 N. Calvert Street, BALTIMORE, MD.

Cement Tests, Chemical Analyses
Reports on Mineral Properties

F. L. SMIDTH & CO. 50 Church St. NEW YORK

SPECIALISTS IN

Engineering Cement Works

—AND—

Cement Making Machinery

THE FULLER ENGINEERING CO.

Designing, Constructing and Operating Engineers

ANALYTICAL CHEMISTS

Cement, Hydrated Lime and Gypsum Plants a Specialty

OFFICES: Allentown Natl. Bank Bldg.

ALLENTOWN, PA.

Rock Products and BUILDING MATERIALS

INCORPORATING DEALERS BUILDING MATERIAL RECORD

Volume XV.

CHICAGO, DECEMBER 22, 1914.

Number 3

PUBLISHED SEMI-MONTHLY.

DEVOTED TO

Quarry Products, Cement, Lime, Plaster, Sand and Gravel, Clay Products and Building Specialties—Fireproof Building and Road Construction.

THE FRANCIS PUBLISHING COMPANY.

EDGAR H. DEFEBBAUGH, Prest.

Seventh Floor, Ellsworth Bldg., 537 So. Dearborn St., Chicago, Ill., U. S. A.
Telephone: Harrison 8086, 8087 and 8088.

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GEORGE A. OLSEN, Editor Retailers' Section. F. G. PULLEY, Associate Editor.
H. F. AKE, Secretary.
DRUSUS H. NICHOLS, Advertising Manager.

Communications on subjects of interest to any branch of the industry are solicited and will be paid for if available.

Every reader is invited to make the office of Rock Products and Building Materials his headquarters while in Chicago.

Editorial and advertising copy should reach this office at least five days preceding publication date.

TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions.....\$1.00
In all other Countries in the Postal Union.....\$1.50
Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.
Advertising rates furnished on application.

Published on the 7th and 22nd of each month.
Entered as second-class matter July 2nd, 1907, at the Postoffice at Chicago, Illinois, under act of March 3rd, 1879.
Copyright, 1914, by E. H. Defebaugh.

Here's wishing to each and every one of our readers a very merry Christmas and a happy and prosperous New Year.

This is the time to build. Depressions that have prevailed for the past six months have brought building conditions to a state most favorable to the investor. Probably there will not again occur such opportunities in the active years of men now living. Just get busy as quick as you can so as to make the most of the situation. Nothing is more certain than that the recent business and industrial lethargy will be followed by a great rush of enterprise and progress. Those who begin early get the picking of the ripest grapes.

A consolidation of all the good roads organizations into one national body to work out the road problems of the country is badly needed. There is a lot of data sectional, climatic, etc., that must be collected. Knowledge of available local materials is also needed. Traffic requirements and the application of known road values to known road necessities is of the first importance. It will be easier to convince the taxpayers by facts so developed than it will ever be to persuade politicians to "put over" road improvements with the taxpayers unconvinced. There is too much work at cross purposes.

The railroads have secured permission to a general raise in the rates of five per cent. It has been a long-winded battle on the part of the roads for more money. The measure as "put over" will raise the price of every commodity to the consumer by just as much as the raise, particularly the indispensables of food, clothing and building materials, in all of which the margins are very close. The raise will be found to be not enough, and another five per cent advance is already predicted, the campaign to begin within a year. Nobody has ever seen any record that looked like the railroads had any intention of acting square with the public.

Shipments of Portland cement from the mills in 1914 will be almost exactly the same as the record of 1913.

A movie story of concrete from improvements cleverly mixed up with love and prosperity is a coming feature of entertaining publicity.

The lesson of the parcels post points very strongly in the direction of federal ownership of all the interstate transportation facilities, including the railroads, the river and harbor improvements and the state-owned canals. Administration waste and operating waste that would be summarily stopped by a federal department would almost pay for the roads in a single decade.

Building money is very likely to come from new channels in the future. That class of investors who have been stung by the exposures of the past year will never put it all into railroad securities again. To all such investors there is no field comparable to that of real estate improvements. There is a tremendous market for money in perfectly sound and permanently valuable properties in all of the larger communities. Suburban and country improvements will easily find the friends that have long been needed by a very responsible and solid contingent of every big city.

Lime manufacturers are taking the stand that all hydrated and ground lime shall hereafter be shipped in paper, or unreturnable bags. Such action by all the manufacturers gets rid of the worst feature of the business as it has stood in the past. Practically all of the hydrated lime has been shipped in paper, because it was started that way. It has saved the user and the dealer, as well as the manufacturer, a whole lot of grief and unavoidable losses that always follow the "return for credit" system of cotton or jute bags. Ground lime in paper bags only will be quite as satisfactory.

In the big cities almost without exception the dealers in building materials complain of the last half of the year as "the worst ever," while from smaller cities and county seat towns they talk just the other way. These latter deponents say that they have never done a better business than in this same last half. The principal difference seems to be the influence of the big city daily papers—always enlarging upon destruction and calamity with shot, shell and bomb. With airship and submarines all hurling and annihilating at once, they frighten timid city capital into hiding places dark and deep.

It is just the right time to begin the new year by opening the door of opportunity by getting your advertisement properly placed and well displayed with the January number. We can now assume that we are adjusted insofar as the foreign war is concerned, and by making a game attack promptly and sticking to it steadily we can make 1915 the wonder year of progress and prosperity. Advertising cannot be worked successfully as a science, for it is an art. The gentle art of suggestion must be contained or it will not pay profits. Like all fine arts it is only perfected by practice—much practice; very much practice.

WITH YOU and ME

The Cleveland Material Co. has the prettiest souvenir of the season in the shape of a folding bill book and card case combined. President W. P. Hurst is a good judge of seal leather as well as the appreciative bump of his customers.

W. P. Clancey, who for the past year has been connected with the Union Cement & Lime Co., Louisville, Ky., in the capacity of city salesman, has resigned his position and is reported to be going with the Ernest Hughes Lumber Co.

W. H. Ford, sales manager of the Canada Cement Co., Ltd., is spending the holidays with his brother, Frank Ford, at Charleston, S. C., enjoying the hunting preserves of the famous club of Southern gentlemen to which he has belonged for many years.

Walter F. Jahneke, of Fritz Jahneke, Inc., and president of the New Orleans Contractors and Dealers' Exchange, who was recently operated on for appendicitis, is rapidly convalescing and hopes to be able to report in a short time that he is back in his usual hale and hearty condition.

Charles H. Brigham, who for years has been located in New York City as assistant to the sales manager of the Atlas Portland Cement Co., arrived in Chicago on Friday, Dec. 12, and assumed charge of the Western office of the Atlas Co. D. L. McFarland has left Chicago for the Eastern office.

Harry P. Boyd, of the National Building Supply Co., Baltimore, Md., has been at the Malborough-Blenheim, Atlantic City, N. J., for the past few weeks, in an effort to regain the vigor and vim of former days. Mr. Boyd has labored long and hard in the Baltimore market and as a result has undermined his health and caused him at this time to seek a quiet place in which to recuperate.

H. P. Caldwell, sales manager for the Ohio River Sand Company, was recently elected to membership in the Rotary Club of Louisville, Ky., which is composed of one member from each trade in the city. The club has over 100 members and has proven itself to be an exceptionally live organization. Weekly dinners are held, at which the members in rotation and a few each week are allowed to "boost their own games."

Editor ROCK PRODUCTS AND BUILDING MATERIALS:
Greetings!

The sun is brightening in the East. The bells, the Christmas bells are ringing.

Peace, peace, good will to all mankind.

Shadowy the New Year looms through the mists of human strife, but swelling from the heart of the great choir that knows no creed, country or class, is that greatest refrain, HOPE.

Let us warmly grasp your hand, our Business Brothers, and look tomorrow squarely in the face.

Did not the bells in their sweet ringing say, "Hope, Peace to All, Good Cheer?" Listen to the deep-throated calliope calling us long and loud to duty.

Who, in this or any other land, shall bind the free-born American who has listened to the sweet ringing of the bells and the deep-throated calliope?

With seasonable remembrances,

SMITH, EMERY & CO.,
Engineers, Chemists.

San Francisco, Los Angeles.

The Marquette Cement Manufacturing Co., with offices at Chicago, have recently added John G. Evans, formerly with the Lehigh Portland Cement Co., and William H. Hurley, formerly with the Universal Portland Cement Co., to its sales force. Mr.

Scheduled Meetings and Shows.

Jan. 12.—Hollow Building Tile Manufacturers' Association of America. Place of meeting not yet decided.

Jan. 12-14.—Iowa Clay Products Manufacturers' Association, Engineering Hall, Iowa State College, Ames, Ia.

Jan. 13-15.—Nebraska Retail Lumber Dealers' (Lumber and building material dealers). Annual convention, Rome hotel, Omaha, Neb.

Jan. 14, 15.—Interstate Stone Manufacturers' Association. Annual convention, Virginia Hotel, Columbus, Ohio.

Jan. 19-20.—Northwestern Clay Association, Minneapolis, Minn.

Jan. 26, 27, 1915.—Retail Lumber Dealers' Association of Indiana, Claypool hotel, Indianapolis, Ind.

Jan. 26-28.—National Association of Builders' Exchanges. Annual convention, Columbus, O.

Jan. 26-28.—Canadian National Clay Products Association. Annual convention, King Edward hotel, Toronto, Ontario.

Feb. 3-5.—Chamber of Commerce of the United States, New Willard Hotel, Washington, D. C.

Feb. 4-5.—Wisconsin Clay Manufacturers' Association, Milwaukee, Wis.

Feb. 8-9.—National Builders' Supply Association. Annual convention, Hotel Sherman, Chicago.

Feb. 8-10.—Illinois Clay Manufacturers' Association, New Leland hotel, Springfield, Ill.

Feb. 9-12.—American Concrete Institute. Eleventh annual convention, Auditorium hotel, Chicago, Ill.

Feb. 10-12.—Illinois Lumber and Builders' Supply Dealers' Association. Annual convention, Hotel Sherman, Chicago.

Feb. 10-17.—Eighth Annual Chicago Cement Show, Coliseum, Chicago.

Feb. 15-16.—American Concrete Pipe Association, Chicago, Ill.

Feb. 15-20.—National Brick Manufacturers' Association, Statler hotel, Detroit, Mich.

Feb. 16-18.—Wisconsin Retail Lumber Dealers' Association. Annual convention, Hotel Pfister, Milwaukee, Wis.

March 2-6.—Mid-West Cement Show, Auditorium, Omaha, Neb.

March 3-5.—Mid-West Cement Users' Association, Auditorium, Omaha, Neb.

Evans has been traveling among the Chicago retailers, while Mr. Hurley has spent his time hitherto in Eastern Illinois. Both men are hustlers and should strengthen the sales department of the Marquette company.

N. S. Sherman and E. J. Corley, of Oklahoma City, Okla., contemplate organizing a company at Miami, Fla., with \$100,000 capital stock to build a plant with a daily capacity of about 44,000 sand-lime bricks. They will utilize local white sand and limestone deposits.

The "Build Now" committee, appointed by the Atlanta Chamber of Commerce recently, has gone to work in an earnest and practical way to bring about desired results. V. H. Kriegshaber is chairman, and R. M. Walker and Chas. Wm. Bernhardt are also on the committee. The object of this committee will be to set forth the advantages of an investment in building now as compared with the cost of building under normal conditions. This committee is cosmopolitan in its scope, and includes architects, real estate men, insurance men, material men and others prominently connected in the business and financial world. Good results are sure to follow such a movement.

In conversation with Mayor Behrman of New Orleans, recently, he spoke of the innovation of rat proofing which had become so important, particularly in the old coast cities. Fred W. Salmen, of the Salmen Brick & Lumber Co., New Orleans, was in the party, and he said that when the mayor's proclamation about rat proofing was promulgated it became necessary for his concern to elevate all the lumber piles so as to give easy access to the dogs and cats, and thereby prevent them from being harbors for the fleeing rats. It was necessary also to lay concrete floors in all of their stables, and these improvements in such a large establishment ran into several thousand dollars but, in his opinion, it was well spent. The mayor remarked that the same rule applied to every citizen of New Orleans, and that in a single active season of the rat crusade they had practically made the city of New Orleans rat proof. He further said that aside from the sanitary necessity of the case, such as the elimination of the disease menace which is carried by rat parasites, the elimination of the rodent had an economical value in the food material which in all past time had been destroyed by the rats, amounting to hundreds of dollars every day, so that the entire cost of rat proofing in the scientific manner as it has been carried out in New Orleans is very promptly reclaimed by the saving of the rat destruction to property and supplies. In the first years of his administration Mayor Behrman was in the lead of the campaign which eliminated the mosquito that carries the yellow fever germ, and so eliminated the Southern latitude from the awful menace that has held back the progress of civilization for more than a century. Several other coast cities have taken up the rat proofing campaign and it makes a new use for concrete which will be indispensable as it becomes better known.

TO EXHIBIT FIREPROOF MATERIALS.

The Standard Building Material Manufacturers' Association has been formed in New York City with C. Stanley Taylor as manager. The offices are at 366 Fifth avenue. The aim of the organization is the promotion of fireproof materials and fire extinguishing devices, which will be exhibited and their use explained to visitors.

The association will maintain a staff of engineers which will be available when advice is required as the fireproofing and underwriting requirements. It is the intention of the organization to be present at all state and industrial exhibitions of building materials and to disseminate in various ways the proven qualities of such materials.

National Rivers and Harbors Congress.

The annual meeting of the National Rivers and Harbors Congress was held in the Willard hotel, Washington, D. C., the week of December 7. Senator Joseph E. Ramsdell, of Louisiana, presided at the meeting, which was well attended by commercial, engineering and political leaders who are patriotically campaigning for the comprehensive improvement of the country's waterways. There has been a disposition in some sources to characterize the whole waterways improvement movement and the congressional appropriations therefor as a "pork barrel" scheme. But this is not borne out by the facts.

It is a matter of more light, more education and more knowledge of the actual value and asset of waterways transportation facilities. On this point Gen. W. M. Bixby, retired, until recently chief of engineers of the United States Army, spoke of the great benefits which had accrued to sections where he had carried on river development work, his statistics giving the increase in land values and in the productiveness of the sections affected. He related an experience with the editor of a leading newspaper, which had attacked one of the projects with which he had been connected. He wrote the editor, giving him the facts for his own information. The editor investigated, with the result that he became convinced of the merit of the project and was a strong supporter thereafter.

Mr. Bryan appeared as a representative of the administration to welcome the congress to Washington, and Speaker Champ Clark said that he was always favorable to the river improvements because navigable waterways were the greatest asset of the people in regulating transportation charges.

Mayor Behrman of New Orleans, La., whose remarkable achievements in the way of public improvements is unequalled in the records of this or any other country, spoke of the practical dollars-and-cents value to all of the people residing within the Mississippi basin and their interest in the comprehensive improvements of the Mississippi and its tributaries. Referring to the Panama canal, he called the Mississippi the natural path of trade from the heart of the country to the orient by the narrow passage of the gulf from New Orleans to Colon.

John H. Bernhard, of New Orleans, announced that he had completed the organization of a \$5,000,000 corporation, the Mississippi River Navigation Co., which will operate steel barges of the Bernhard self-propelling type between St. Louis and New Orleans, beginning in the spring of 1916. He declared the difficulty in restoring river transportation is not the depth of the channel, but the type of river boat and the lack of modern terminal facilities.

"Still," said he, "the average 'river man' will insist that the poor conditions of the channel keep our inland waters idle. This is preposterous. The Rhine cannot compare with the Mississippi river in its advantages for transportation; its channel is narrower and shallower, more changeable; the current is swifter and ice is known in the winter months over its entire navigable length to its very mouth. Yet last year over 96,000 vessels passed the Dutch and German frontiers on the Rhine, which means a vessel almost every five minutes for the entire year."

The program, as usual, was largely made up of speeches from prominent men interested in the waterway movement.

Senator Ramsdell was re-elected president of the congress and the personnel of the organization remains practically the same.

Texas Cement Plaster Co., Hamlin, Texas, capital stock \$64,000, has been incorporated by S. M. Clerida, J. R. Keaton and T. W. McCahan.

The BUILDERS' POET

CHRISTMAS WITH THE BOYS.

I.

Waal, neighbor, drive right in the barn, I'll help unhitch th' mare,
We'll put her in the box stall in the corner over there;
I'm glad enough to see you, I'll pitch down a fork o' hay
To keep the old girl munchin' on, so she'll enjoy the day.
Thar, now we'll go up to the house, and toast our toes a bit;
I'm longin' for a visit, and we'll take our time fer it.

II.

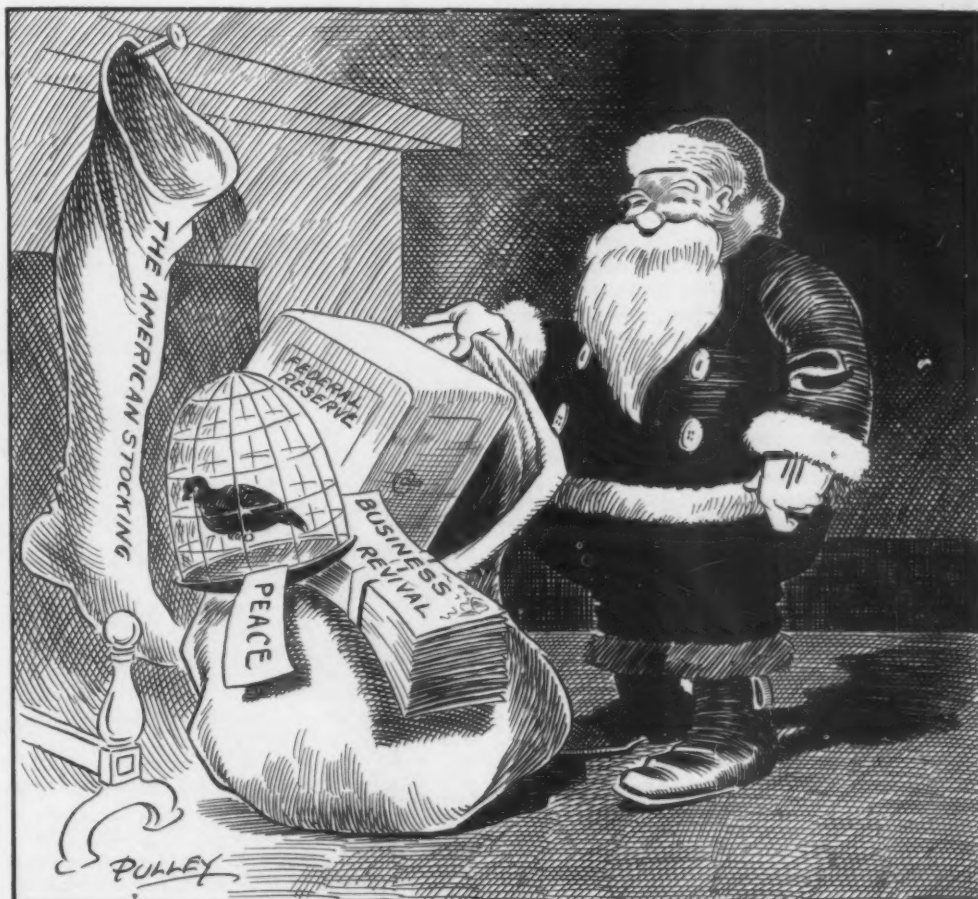
The other folks will soon be here, the boys are comin' too,
To celebrate this Christmas day just like we used to do;
Of course, 'twill be some different, with the little ones as well;
John's Will and Bert and Nellie, and George's Sue and Belle.
It's fine to be a Grand-dad, but it makes me call to mind
The memory of other years, the ones I've left behind.

III.

While Mother lived, each year we always had a Christmas tree,
The boys would help me haul it, and we'd trim it, she and me;
She always set a powerful store arranging things and such,
And it required some scheming, for we hadn't over much;
We used to hate our poverty, but now I'd give my eyes
To live again the happiness, we didn't realize.

IV.

Those Christmases with Mother and the boys a-playing 'round—
I close my eyes and seems t' me I almost hear the sound
Of shouts and happy singin' and—and now and then a word
Said in a happy, quiet voice, the gentlest ever heard—
Why, bless my heart, here comes the folks, waal, waal, it does seem fine
To have a Christmas dinner with those boys and girls o' mine.
—Frank Adams Mitchell.



SOME SUBSTANTIAL REASONS FOR A MERRY CHRISTMAS AND HAPPY NEW YEAR.

ROAD BUILDING

A. R. B. A. Convention Draws Thousands

The eleventh annual convention of the American Road Builders' Association was called to order at three o'clock Tuesday, Dec. 15, in the Saddle and Sirloin Club rooms, located close to the International Amphitheatre, in which the exhibit of road construction materials and machinery was held, by Pres. W. A. McLean, of Toronto. The opening of this convention was greeted by zero weather in Chicago, which caused the road builders to forsake the hall in the amphitheatre, which had been put aside for them, and hold their sessions in the rooms offered them by the stockyard men's club. At the opening session there were 350 delegates present, but before the last session closed there were counted 4,000 registrations.

After an invocation by Rev. J. P. Stafford, of Chicago, President McLean introduced Commissioner of Public Works L. E. McGann, who represented Mayor Carter H. Harrison, of Chicago. On behalf of the mayor and the city, Mr. McGann welcomed the convention to Chicago. Another welcome was extended by A. D. Gash, president of the Illinois highway commission, who spoke for Governor Edward F. Dunne. Assistant Superintendent of Schools John D. Shoop followed Mr. Gash and extended a welcome on behalf of the Chicago Association of Commerce.

In response to these addresses of welcome, President McLean expressed the thanks of the association for the welcome extended to its members and their guests. The president's annual address was not read, but had been previously printed, and was distributed to the delegates.

Hon. Finlay G. MacDiarmid, minister of public works for the province of Ontario, spoke on the various phases of the road problem in Canada. Mayor H. C. Hocken, of Toronto, was the next speaker and was followed by Mayor Martin Behrman, of New Orleans.

The last speaker of the afternoon was William D. Sohler, chairman of Massachusetts highway commission. Colonel Sohler emphasized the necessity of engaging trained engineers for road building and condemned the policy adopted by some states of changing engineers at every opportunity.

At the close of this address President McLean appointed a resolutions committee.

Wednesday's Session.

Second Vice-President A. W. Dean, chief engineer of the Massachusetts highway commission, called the second session of the convention to order at 10:30 a. m., Wednesday, Dec. 17.

Linn White, chief engineer of Chicago's South Park commission, read a paper entitled, "Road and Pavement Dimensions—Widths, Depths and Crown." This paper was discussed by A. R. Hirst, state highway engineer of Wisconsin, and James H. MacDonald, formerly state highway commissioner of Connecticut.

The next paper was presented by J. A. Johnston, division engineer of Massachusetts highway commission, on "Road Foundations—Concrete, Telford, Gravel, Etc.," which was discussed by Robert C. Terrell, commissioner of public roads of Kentucky; C. A. Kenyon, president of the Indiana Good Roads Association; F. E. Ellis, manager of the Essex Trap Rock & Construction Co., Peabody, Mass.; Linn White and H. W. Durham, chief engineer of the bu-

reau of highways, Borough of Manhattan, New York.

Third Session.

First Vice-President George W. Tillson, consulting engineer to the president of the Borough of Brooklyn, New York, was chairman of the third session, which was held Wednesday afternoon.

The first speaker, John N. Carlisle, state highway commissioner of New York, read a paper on "Organization of a State Highway Department," which was discussed by Paul D. Sargent, chief engineer of the Maine state highway commission; S. E. Bradt, secretary of the Illinois state highway department, and W. O. Hotchkiss, state geologist of Wisconsin.

"Traffic, Present Tendencies, Probable Development and Regulation" was treated in a paper presented by A. W. Dean, of Massachusetts, and discussed by C. A. Kenyon, of Indiana.

Prof. T. R. Agg, of Ames, Ia., gave a very instructing talk on "Machinery for Construction and Maintenance—State, Municipal, Contractors, Traction Haulage of Stone, Care of Machinery—Instructions to Engineer and Operator."

At the close of this session a brief business session of the association was held for the purpose of appointing the nominating committee.

The Annual Banquet.

The ballroom of the Hotel LaSalle was the scene of activity on Wednesday evening, when the annual banquet of the association was held. A male quartette and a fair-sized orchestra furnished the diners with entertainment. Popular songs and parodies

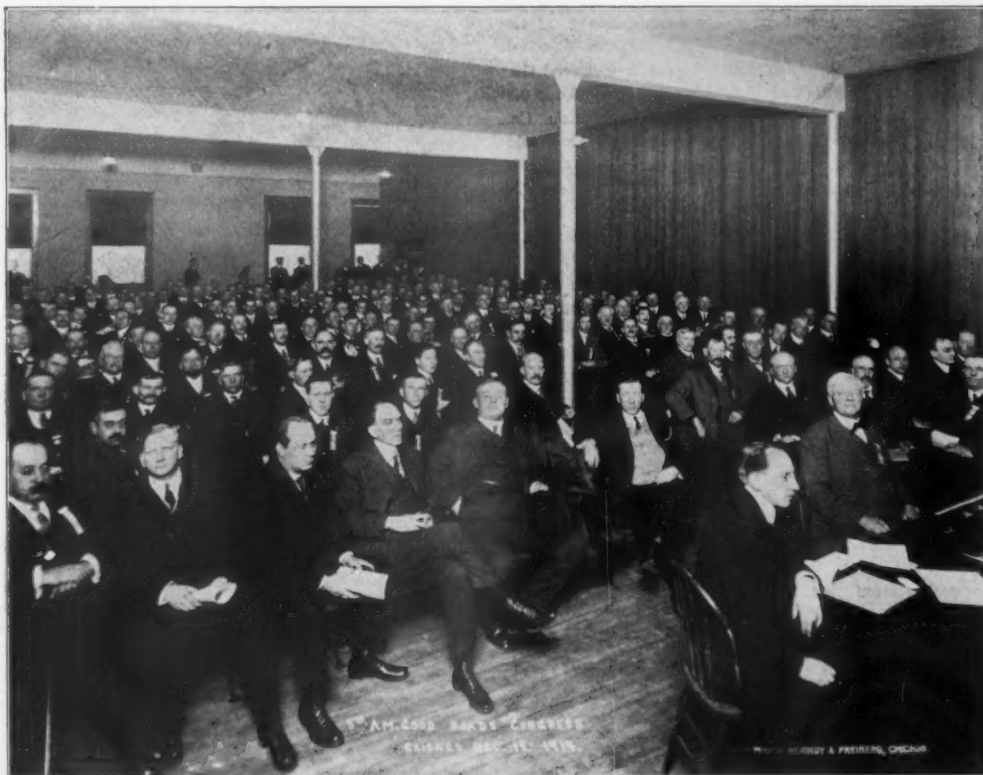
were printed in small booklets and supplied to the banqueters. These songs were sung between the various dishes which were served after the oysters and before the demi tasse.

At the conclusion of the dinner and with the lighting of cigars, President McLean spoke briefly on the success of the convention and took occasion to praise the work done by Secretary E. L. Powers in arranging the convention and exhibition. Hon. W. H. Armstrong, minister of public works of Nova Scotia, then spoke of road conditions in Canada, after which W. G. Edens, president of the Associated Roads Organizations of Chicago and Cook County, praised the road builders for their good judgment in deciding to come to Chicago and recommended amid laughter that all sessions be held in that city. State Highway Commissioner Carlisle of New York, and Eben More of Scotland, who came over especially to attend the A. R. B. A. convention, were other speakers at the banquet. The talks were given between vaudeville stunts.

Thursday's Proceedings.

Harold Parker, past president of the association, opened the fourth session of the convention on Thursday morning.

"Brick Roads and Streets," was the first paper read at this session. It was presented by Division Engineer John Laylin of the Ohio state highway department and discussed by W. M. Acheson, division engineer New York state highway department; Leonard S. Smith, of the University of Wisconsin; Maj. W. W. Crosby, consulting engineer, Baltimore;



DELEGATES OF THE AMERICAN ROAD BUILDERS' ASSOCIATION IN SESSION AT THE SADDLE AND SIRLOIN CLUB.

W. P. Blair, secretary National Paving Brick Manufacturers' Association, and M. F. Bramley, president of the Trinidad Paving Co., of Cleveland.

Clifford Older, bridge engineer of Illinois, reviewed a paper on "Surfaces or Floors for Bridges," which he had prepared but was forced to cut short because of the lateness of the hour.

Thursday Afternoon.

The fifth session, held on Thursday afternoon, saw President McLean again in the chair, who called upon John R. Chamberlin, in charge of bridges, Ohio state highway department, to discuss the paper presented by Mr. Older at the morning session. He was followed by E. A. Byrne, assistant engineer department of bridges, New York.

"Bituminous Construction and Maintenance—Recent Practice" was the subject of a paper by W. D. Uhler, principal assistant engineer bureau of highways and street cleaning, Philadelphia, Pa. This was discussed by R. A. Meeker, of New Jersey; G. T. Donoghue, who spoke for E. A. Kanst, of Chicago, and R. K. Compton.

H. J. Kuelling, the energetic county commissioner of Milwaukee county, Wis., who was unable to be present, sent a paper on "Concrete Roads," which was read by A. R. Hirst and discussed by Frank F. Rogers, of Michigan; P. C. McArdle, of Illinois, and others.

After the discussion of this paper a business session was held in which the report of the committee on standards was read and adopted. This was followed by a report of the legislative committee and the report of the committee on resolutions.

Friday's Sessions.

The Friday sessions consisted of the reading by R. A. Gillispie of a paper on "Recent Practice in Construction in Wood and Granite Blocks," prepared by W. A. Howell, engineer of streets, Newark, N. J.; "Present Practice in Earth and Gravel Road Construction and Maintenance," by Ira O. Baker, of the University of Illinois; "Street Paving in Small Cities," by Thomas H. MacDonald, state highway engineer of Iowa; "Convict Labor in Road Construction," prepared by T. J. Ehrhart, state highway commissioner of Colorado, and read by W. W. Crosby; "Dust Prevention and Street Cleaning," by W. H. Connell, chief bureau of highways and street cleaning, Philadelphia. All of these papers were discussed by members present.

At the business session, which closed the convention of the road builders, the committee on credentials reported that there were at least 4,000 registrations and that the delegates and visitors came from 47 states, eight Canadian provinces and seven foreign countries. The recommendation of the board of directors to increase the dues from \$2.00 to \$4.00, beginning with January, 1915, was approved.

NOTES OF THE CONGRESS.

Every space of the ground floor of the International Amphitheatre was occupied, as previously arranged by manufacturers of road construction machinery and materials, a list of which follows:

Acme Road Machinery Co., Frankfort, N. Y.
Albrecht Excavator Co., Milwaukee, Wis.
American Clay Machinery Co., Willoughby, Ohio.
Amies Road Co., Easton, Pa.
Arrow Motor Cartage Co., Chicago, Ill.
Austin-Western Road Machinery Co., Chicago, Ill.
Ayer & Lord Tie & Timber Co., Chicago, Ill.
Association of American Portland Cement Mfrs., Philadelphia, Pa.
John Baker, Jr., Chicago, Ill.
Baldwin Locomotive Works, Philadelphia, Pa.
Barber Asphalt Paving Co., Philadelphia, Pa.
Barber Asphalt Paving Co., Chicago, Ill.
Barrett Mfg. Co., New York, N. Y.
Bausch & Lomb Optical Co., Rochester, N. Y.
Blackmer Rotary Pump, Power & Mfg. Co., Petoskey, Mich.
Bituminized Road Co., Kansas City, Mo.
Bonney Supply Co., Rochester, N. Y.
Bucyrus Co., South Milwaukee, Wis.
Buff & Buff Mfg. Co., Boston, Mass.
Burdick Enamel Sign Co., Chicago, Ill.

Buffalo Steam Roller Co., Buffalo, N. Y.
Philip Carey Co., Cincinnati, Ohio.
J. I. Case Threshing Machine Co., Racine, Wis.
Chain Belt Co., Milwaukee, Wis.
Chicago Creosote Co., Chicago, Ill.
Chicago Portland Cement Co., Chicago, Ill.
F. D. Cummer & Sons Co., Cleveland, Ohio.
Eugene Dietzgen Co., Chicago, Ill.
Domestic Engine & Pump Co., Shippensburg, Pa.
Dunn Wire-Cut-Lug Brick Co., Conneaut, Ohio.
Eagle Wagon Works, Auburn, N. Y.
Erie Machine Shops, Erie, Pa.
A. B. Farquhar Co., Ltd., York, Pa.
Frohman Chemical Co., Sandusky, Ohio.
Gallion Iron Works & Mfg. Co., Gallion, Ohio.
Headley Good Roads Co., Philadelphia, Pa.
Huasteca Petroleum Co., New Orleans, La.
Robert W. Hunt & Co., Chicago, Ill.
Charles Hyass & Co., New York, N. Y.
Ideal Concrete Machinery Co., Cincinnati, Ohio.
Illinois Stone Club, Chicago, Ill.
Ingersoll-Rand Co., Chicago, Ill.
International Motor Co., Chicago, Ill.
Jaeger Machine Co., Columbus, Ohio.
Thos. B. Jeffery Co., Kenosha, Wis.
Jennison-Wright Co., Toledo, Ohio.
Keuffel & Esser Co., Chicago, Ill.
Kelley-Springfield Motor Truck Co., Springfield, Ohio.
Kettle River Quarries Co., Minneapolis, Minn.
Kinney Mfg. Co., Boston, Mass.
Knox Motors Co., Springfield, Mass.
Koehring Machine Co., Milwaukee, Wis.
F. J. Lewis Mfgs. Co., Chicago, Ill.
Marion Steam Shovel Co., Marion, Ohio.
Marquette Cement Mfg. Co., Chicago, Ill.
Marsh-Capron Mfg. Co., Chicago, Ill.
Mechling Bros. Mfg. Co., Camden, N. J.
N. S. Monroe & Sons, Arthur, Ill.
Municipal Engineering & Contracting Co., Chicago, Ill.
National Paving Brick Manufacturers' Assn., Cleveland, Ohio.
Novo Engine Co., Lansing, Mich.
Orenstein-Arthur Koppel Co., Chicago, Ill.
Orr & Sembower, Inc., Reading, Pa.
Philadelphia Quartz Co., Philadelphia, Pa.
Power & Mining Machinery Co., Cudahy, Wis.
Rapid Mixer Co., Grand Rapids, Mich.
Robeson Process Co., New York.
Rocmac Road Corporation of America, Ltd.
Thomas M. Roche, Chicago, Ill.
Russell Grader Mfg. Co., Minneapolis, Minn.
Semet-Solvay Co., Syracuse, N. Y.
Standard Asphalt & Rubber Co., Chicago, Ill.
Standard Oil Co., Chicago, Ill.
A. Streich Bro. Co., Oshkosh, Wis.
C. B. Smith & Co., Cleveland, Ohio.
T. L. Smith Co., Milwaukee, Wis.
Steel Protected Concrete Co., Philadelphia, Pa.
Thew Automatic Shovel Co., Lorain, Ohio.
Tarrant Mfg. Co., Saratoga Springs, N. Y.
Troy Wagon Works Co., Troy, Ohio.
Turbine Sewer Machine Renovating Co., Milwaukee, Wis.
Trussed Concrete Steel Co., Detroit, Mich.
U. S. Asphalt Refining Co., New York.
U. S. Wood Preserving Co., New York.
Universal Portland Cement Co., Chicago, Ill.
Utility Road & Farm Machinery Co., Chicago, Ill.
Warner Quinlan Asphalt Co., New York.
Warren Bros. Co., Boston, Mass.
Watson Wagon Co., Canastota, N. Y.
Wheeling Corrugating Co., Chicago, Ill.
White Co., Cleveland, Ohio.
Wiard Plow Co., Batavia, N. Y.
Wisconsin Granite Co., Chicago, Ill.
M. P. Zindorf, Seattle, Wash.

The Lehigh Portland Cement Co. was represented by Chas. E. Reid, H. A. Abbott, O. H. D. Rhor and W. H. Eccles.

The Chicago Portland Cement Co. had an interesting exhibit at which J. J. Commons, Col. C. H. Greenleaf, W. S. Conn, F. J. Cassidy, E. A. Mollon and C. M. Wood were to be found shaking hands with many old and new friends who are interested in the use of cement in road building.

The Marquette Cement Mfg. Co. had a large exhibit, in line with the important part this enterprising concern has played in the construction of good roads during the past two years. Its representatives on hand included R. B. Dickinson, Gold Williams, S. C. Hunter, C. L. Fitzgerald, John G. Evans, Wm. T. Joyce, W. H. Hurley and B. A. McDonald. The Marquette company furnished the cement for the state of Illinois during the past year, a substantial portion of which went into the road improvements it is carrying on.

The Universal Portland Cement Co. had a big bunch at its pretentious exhibit, at which samples of concrete roads taken from pavements many years old were displayed. The Universal division consisted of Edward M. Hagar, Morris Metcalf, J. P. Beck, W. M. Kinney, K. H. Talbot, J. C. Van Doorn, B. H. Rader, B. F. Affleck, R. F. Hall, B. S. Smith, C. D. Clugston, Theo. S. Pabst, C. C. Secrist, A. C. Wilby, E. J. Dowdall, J. P. Jerka, J. W. Shaw, Thos. M. Hunt, J. C. Larimer, O. A. Strass, J. P. Scover, Paul D. Van Vleet, Edward E. Mick, L. A. Bissonnette, H. B. Kirk, E. A. Thrift and J. H. Libberton.

The affable battery of the Sandusky Portland Cement Co. was composed of E. P. Hoge, A. A. Stade, W. K. Evans, W. C. Jones, H. D. Jenkins and W. P. Duggan, the latter of Cleveland, who is developing into quite an authority on the use of white Portland cement and who knows how to present its possibilities to others.

Conspicuous among the Atlas Portland Cement Co.'s men was W. T. Chollar, the concern's road expert; C. H. Brigham, a new man in the West, but an enthusiastic concrete road booster; Philip Golden, L. V. Costello, H. D. Kerr, J. T. Healy, Jr., and H. D. Mercer.

The Illinois Stone Club's exhibit was a constant center of attraction to hundreds of visitors to the congress. Specimens of various sizes of stone for use in macadam road building were on display, as well as a number of photographs of perfect roads constructed of this material. Its representatives who were present at the congress were: Harry Walbaum, T. A. Kerr, Paul Henderson, secretary of the club; Wm. M. Carter, Stuart Gardner, A. L. Sullivan, J. J. Sullivan, T. B. Sexton, Willard E. Cook, T. J. Hodgkins, Robt. W. Campbell, O. P. Chamberlain, John O'Laughlin, E. J. Krause, W. L. Hodgkins, Julian Please, Chas. Klotz, M. Dryfus and Miss Fay Miriam Rest.

Among the visiting retail building material dealers were George C. Schroeder, of Wykes-Schroeder Co., president of the Builders' and Traders' Exchange of Grand Rapids and treasurer of the National Builders' and Traders' Exchange; N. H. Parsons, of the Parsons Lumber Co., Rockford, Ill., and T. E. Fleischer, manager of the Shelbygan Lime Works, Sheboygan, Wis.

W. E. Cobean, sales manager of the Wolverine Portland Cement Co., took a run into Chicago from Coldwater, Mich., to attend the road congress and meet old and new friends of the Wolverine Co.

Mr. Lee, of the Arrow Motor Cartage and Manufacturing Co., Chicago, was busy during the entire congress demonstrating Lee wagon loaders.

Frank B. Dunn, of the Dunn Wire-Cut-Lug Co., was one of the most popular men at the show. A fresh supply of carnations was received at his booth daily and distributed to "all comers." Mr. Dunn says, "We all like flowers, and it pleases me to be able to give them away."

Messrs. Sykes and Hampson, of the Troy Wagon Works Co., proudly described to visitors at the show, as well as old and new friends at the Hotel LaSalle, the merits of the "Ajax" wagon.

The busiest man in the booth of the National Paving Brick Manufacturers' Association was H. H. MacDonald, assistant secretary of the association. Quite a few of Mac's bosses—paving brick manufacturers—were present during the show, as was also Will Blair, secretary, and C. J. Deckman, president. Mr. Hanson, of the paving brick publicity bureau of Chicago, made this booth his headquarters.

THE JOHN BAKER, JR., EXHIBIT.

During the meeting at the American Road Builders' Association, John Baker, Jr., large distributor of asphalt, bituminous products and road oils, in connection with an exhibit at the amphitheatre in

(Continued on Page 33.)

The RETAILER

Face Brick Men in Separate and Joint Sessions

The meeting of the Face Brick Dealers' Association of America, held at French Lick, Ind., Dec. 9 and 10, was of exceptional interest to face brick dealers of the United States and Canada, of whom more than 50 were present. The transfer of cars en route and split commissions were two of the many topics discussed which received the undivided attention of the retailers and in the discussion of which they took active part.

President F. Lawson Moores called the first session to order on Wednesday morning, Dec. 9, and the roll call showed the following attendance, in addition to which were a number of retailers in the hotel who did not reach the convention hall in time to be recorded on the roll of those present:

B. Mifflin Hood, B. Mifflin Hood Brick Co., Atlanta, Ga.

John W. Sibley, Southern Face Brick Exchange, Birmingham, Ala.

J. A. Dolben, Dolben & Sullivan, Boston, Mass.

E. F. Knight, Buffalo Builders' Supply Co., Buffalo, N. Y.

R. P. Harkness, J. M. Stoner, Cincinnati Clay Products Co., Cincinnati, O.

C. E. McCammon, L. H. McCammon Bros., Cincinnati, O.

F. L. Moores, A. W. Riggs, D. Wever, The Moores-Coney Co., Cincinnati, O.

Walter Pursell, E. F. Grand, Pursell-Grand Co., Cincinnati, O.

Geo. Rinkenberger, The Brick Sales Co., Cincinnati, O.

Leroy N. Gaddis, C. F. Harrison, Gaddis-Harrison Brick Co., Columbus, O.

W. A. Fay, J. F. Leonard, The Cuyahoga Builders' Supply Co., Cleveland, O.

R. L. Queisser, The Queisser-Bliss Co., Cleveland, O.

Charles Bonner, The Bonner-Marshall Co., Chicago, Ill.

H. L. Matz, L. D. Binyon, J. A. Hogan, S. S. Kimbell Brick Co., Chicago, Ill.

James J. Lyon, Meacham & Wright Brick Co., Chicago, Ill.

Ralph Spencer, Dresden Brick Co., Detroit, Mich.

Samuel E. Matter, Standard Salt & Cement Co., Duluth, Minn.

Theo. C. Schwier, Ed. M. Baltes & Co., Fort Wayne, Ind.

S. A. Mormon & Co., Grand Rapids, Mich.

Carl G. Snyder, Frederick A. McDonald, Grand Rapids, Mich.

A. B. Meyer, A. B. Meyer & Co., Indianapolis, Ind.

Geo. Schwarz, Ricketson & Schwarz, Milwaukee, Wis.

Isaac H. Tyler, Tyler Builders' Supply Co., Louisville, Ky.

David McGill, David McGill, Montreal, Can.

E. F. Dartnell, Dartnell, Limited, Montreal, Can.

E. M. Taylor, Fiske & Co., Inc., New York, City.

James G. Beemer, Chestnut Ridge White Brick Co., New York City.

F. R. Upton, F. R. Upton, Newark, N. J.

A. S. Reid, A. S. Reid Co., Newark, N. J.

T. B. Freeman Pittsburgh Clay Products Co., Pittsburgh, Pa.

Theo. H. Swan, Theo. H. Swan, Rochester, N. Y.
Fred J. McDonald, McDonald Coal & Brick Co., Detroit, Mich.

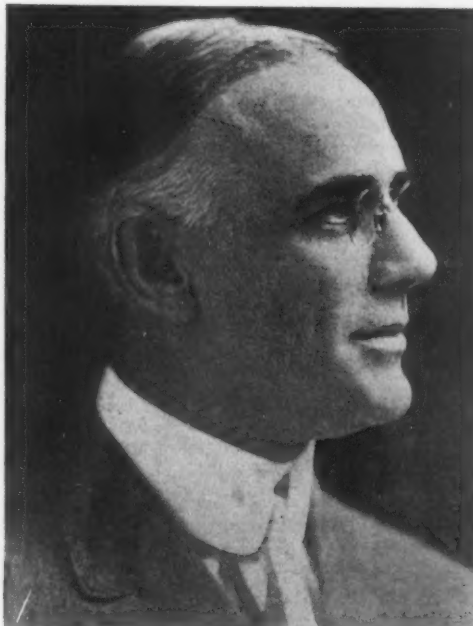
A. W. Bremner, Alex Bremner, Ltd., Montreal, Can.

George Hyde, Hyde & Son, Ltd., Montreal, Can.

R. B. Tyler, R. B. Tyler & Co., Louisville, Ky.

George Nunn, Detroit Brick Sales Co., Detroit, Mich.

Immediately following the roll call, minutes of the last annual meeting held at French Lick, Dec. 11-13, 1913, and of the semi-annual meeting at Cleveland, May 12, 1914, were read to refresh the



F. LAWSON MOORES, PRESIDENT, FACE BRICK DEALERS' ASSOCIATION.

memory of those present with what had transpired at the previous meetings.

Several members who were unable to attend the meeting sent letters and telegrams which were read.

The committee on "formation of an ethical code to govern the selling of brick and the relationship between the salesman and the architect" reported, as did the members of the "joint committee of manufacturers and dealers to urge upon Congress and the executive branch of the United States government an investigation of the use of brick and burned clay products, the distribution of literature, etc." Both of these committees have taken the questions up with similar committees of the American Face Brick Manufacturers' Association, but no progress could be reported. The committees were continued.

The discussion of the transfer of cars while en route developed that some Canadian roads were transferring cars to save paying car mileage to other roads. It was also brought out that some of this transferring was done because manufacturers loaded equipment which was not fit for long hauls.

Upon motion of David McGill, Montreal, the following resolution was adopted:

"Resolved, that manufacturers use the utmost care in loading cars with face brick, especially for long hauls; that the cars be thoroughly inspected before loading as to possible bad order; secondly, that all bills of lading be stamped 'This car must not be transferred enroute. Contents liable to damage,' and, third, that dealers refuse to accept cars from railroad companies when transferred enroute unless first fully inspected to see if any damage has taken place and, if so, immediately to call the railroad agent's attention thereto before unloading and file claim for such damage."

The subject of split commissions, after being discussed by Messrs. Binyon, Reid, McGill and Fay, was deferred until the meeting scheduled for Thursday morning. A large number of the dealers took active part in discussing "the establishment of selling agencies by manufacturers to sell direct to the trade or consumers, instead of through legitimate brick dealers." At the conclusion of this discussion, W. A. Fay of Cleveland suggested that matters could be well handled by local dealers' organizations as the questions came up in the various cities. President Moores suggested that a joint committee of one delegate from each of the local city associations meet and arrange to take this question up directly with the manufacturers' association, but upon motion the matter was referred to the executive committee with instructions to work out a definite plan of action.

Edward K. Cormack, president of the National Builders' Supply Association, addressed the assembled dealers on "Why Dealers Should Join the National Builders' Supply Association." Mr. Cormack brought out the idea that retailers of builders' supplies, regardless of the particular kinds of materials they handle, should be affiliated with the National Builders' Supply Association.

Wednesday afternoon was given over to a joint meeting with the manufacturers, at which time a paper prepared by Paul B. Belden, of the Belden Brick Co., Canton, Ohio, entitled "Switching from Frame to Brick," was read. Mr. Belden was unable to be present at the convention and Secretary R. D. T. Hollowell, of the manufacturers' association read the paper, which was full of experiences and suggestions profitable to the retailer of face brick.

An informal banquet was the feature of Wednesday evening. This banquet was held in conjunction with that of the American Face Brick Association.

Immediately after calling the Thursday morning session to order, President Moores reported that the executive committee had voted upon and received into membership the following firms:

McDonald Coal & Brick Co., Detroit, Mich.; Hyde & Sons, Ltd., Montreal, Canada; Alex Bremner, Ltd., Montreal, Canada; Twin City Brick Co., Minneapolis, Minn.; York-Penn Brick Co., Syracuse, N. Y.

The president then suggested that a uniform contract be arranged for use between the dealers and the manufacturers. The matter was referred to the executive committee. This committee was also instructed to consider the matter of drafting a code

of rules to apply among dealers doing business in the same cities and to complete arrangements for engaging an attorney to represent the association in all legal matters.

The question of split commissions was then further discussed. Messrs. Matz, Gaddis and Schwartz spoke on the subject. On motion it was agreed to refer the matter to the executive committee.

The executive committee was instructed to arrange for a summer meeting at Niagara-on-the-Lake, the committee to take the matter up with the manufacturers.

Secretary R. C. Queisser reported that articles of incorporation had been drawn up and signed by the various members living in Ohio, which was necessary to secure an Ohio charter, the association to be incorporated as a "no profit" organization.

An address was then made by S. K. Beebe, of the American Art Works, on "Tin Signs Advertising the Brick Industry."

Herman L. Matz, of Chicago, who made the trip from San Francisco direct to the convention at French Lick, then gave a very interesting talk regarding the brick exhibit to be erected and maintained at the Panama-American Exposition at San Francisco, the location to be among the group of state buildings and across the avenue from the Massachusetts state building. All exterior and interior brick, also the common brick and roofing tile, was contributed by California manufacturers. Mr. Matz announced that the Brick Layers' Union would provide free of charge all labor in the erection of the building. Mr. Matz asked the co-operation of not only all dealers, but the manufacturers, in this work.

The president then advised the next order of business would be the election of officers. On motion of Isaac H. Tyle, duly seconded by C. E. McCammon and George Schwarz, the incumbent president, secretary and treasurer and the executive committee were nominated and unanimously re-elected for the ensuing year.

Floyd Waite, Cleveland, attorney and counsel of the "S-A-F-E" society, then delivered a masterful address on what the Society Advocating Fire Elimination had done and its future possibilities. This was listened to with a great deal of interest. His talk touched on the relationship between the manufacturer and dealer, the further advancement of the brick selling business, and safe construction. This address will be published in subsequent issues of ROCK PRODUCTS AND BUILDING MATERIALS.

On Thursday afternoon another joint meeting was held with the manufacturers at which time a 45-minute talk was given by Mr. Strong on the question of overhead costs, system, etc.

Mr. Matz gave a further talk and outline of the plan and exhibit of brick to be shown at the Pan-American Exposition, San Francisco, in 1915.

Manufacturers' Sessions.

The American Face Brick Association opened the first session of its convention at French Lick Springs hotel, French Lick, Ind., on Tuesday, Dec. 8, with a banner attendance. Every firm holding membership in the association was represented.

Routine business, enlightened by interesting officers' reports, consumed the day. Important decisions were reached regarding the scope of the transportation and other committees. In the former it was decided, among other things, that the present activities of the secretary in the way of securing better general traffic conditions should continue and that he should further serve the membership as he had been doing in the past regarding the reporting of freight rates and checking of freight bills.

An interesting discussion arose as to the practicability and advisability of drafting a telegraphic code for the use of the members of the association in their dealings with each other and with their

representatives. This was given approval and the code will be prepared at once.

J. M. Adams, chairman of the committee on cost accounting, reported that little progress had been made in this direction, partly owing to the fact that he had been seriously ill for several weeks, which illness, following on that of Mr. Lenkerd, of the Eastern Paving Brick Manufacturers' Association, had put a more or less effectual stop to the conferences which were to have been held by the joint committees of the Refractories Manufacturers' Association and the two associations represented by Mr. Lenkerd and Mr. Adams.

On Wednesday, Dec. 9, the face-brick manufacturers offered a most attractive program in a series of "short talks" on the outlook for 1915. These were given by Harold W. Holmes, of Detroit, Mich., who spoke for the North; J. Parker B. Fiske, of Boston, Mass., for the East; John W. Sibley, of Birmingham, Ala., for the South, and B. W. Ballou, of Buffville, Kan., for the West.

The first of the speakers sounded the keynote for, perhaps, all the rest, when he told the story of a negro woman who, having been injured in a railroad wreck, was approached by a lawyer who asked her if she intended to sue the company. On her asking "Why?" he answered: "Don't you want damages?" Her answer summarized the condition of



HAROLD W. HOLMES, PRESIDENT AMERICAN FACE BRICK ASSOCIATION.

the brick business. It was "Deed, man, I don't want damages—what I need is repairs."

Although unable to be present himself, Paul Belden, of Canton, Ohio, forwarded a paper entitled, "Switching from Frame to Brick," which was so full of common sense, pertinent suggestion and easily understood possibilities, as to bring round after round of applause to its reading and a resolution that it would be read again in a joint session of manufacturers and dealers, which was subsequently done.

At the informal banquet on Wednesday evening, four speakers participated, none talked more than eight minutes and each had something interesting to say. J. W. Moulding, retiring president, presided at the guests' table, turning over the gavel to John W. Sibley, who acted as toastmaster. Mr. Sibley introduced Arthur D. Rogers, editor of the "Brick-builder," of Boston, who in turn introduced I. K. Pond, of Chicago, former president of the American Institute of Architects, and a prominent American architect.

Edward E. Sheasgreen was the first speaker Thursday morning. He addressed the brickmakers

on "Cost Finding." At this session the following officers and directors were elected for the ensuing year:

Harold W. Holmes, Puritan Brick Co., Detroit, Mich.; E. C. Clark, Kittanning Brick and Fire Clay Co., Pittsburgh, Pa., first vice-president; J. M. Adams, Ironclay Brick Co., Columbus, Ohio, second vice-president; R. D. T. Hollowell, secretary-treasurer. F. W. Butterworth, Western Brick Co., Danville, Ill.; Ralph Simpkins, Hydraulic-Press Brick Co., St. Louis, Mo.; John H. Black, Jewettville Brick Co., Buffalo, N. Y.; John W. Sibley, Sibley Brick Co., Birmingham, Ala.; Hay Walker, Hay Walker Brick Co., Pittsburgh, Pa.; J. W. Moulding, Thomas Moulding Brick Co., Chicago, Ill., directors.

NOTES OF THE CONVENTION.

Brick men took to the water at French Lick as babies do to a certain well-advertised product—they almost "cried for it."

The headquarters of the Cincinnati Brick Club on the first floor of the hotel was a popular place. Grouped together in a number of rooms were the following: F. Lawson Moores, Don Weaver, A. W. Riggs, of Moores-Coney Co.; Walter Pursell, E. F. Grand, of Pursell-Grand Co.; Charles E. McCammon, of L. H. McCammon Bros.; Robert P. Harkness, John M. Stoner, of Cincinnati Clay Products Co.; George Rinkenberger, of the Brick Sales Co.

At least two special Pullman sleepers were chartered by brick men to convey them to the home of "Mr. Pluto." One reached the springs from Columbus, Ohio, with 17 enthusiastic clayworkers, while another, containing 13 lively boosters of burned clay, made the trip from Chicago.

A. B. Meyer, of Indianapolis, took advantage of the opportunity to combine pleasure with business. Accompanied by his daughter, he spent an additional several days before and after the convention period. Mr. Van Wert, brick salesman, assisted Mr. Meyer in representing A. B. Meyer & Co.

George Swartz, of Milwaukee, showed the material of which Milwaukeeans are made by preaching optimism at every opportunity.

A delegation of five retailers from Montreal graced the convention hotel with their presence. The men and the firms they represent are: George Hyde, Hyde & Son, Limited; A. W. Bremner, Alex Bremner, Limited; David McGill, David McGill, Limited; W. McKergow, National Brick Co.; F. Dartnell, Dartnell, Limited.

Martine Lindsay and Charles L. Hannon, of Toronto, Canada, represented "Specification Data," which they termed the Canadian information bureau.

Among the Chicagoans present were: J. W. Moulding, T. C. Moulding, of Thomas Moulding Brick Co.; H. L. Matz, L. D. Binyon, J. A. Hogan, of S. S. Kimbell Brick Co.; C. J. Hill, M. N. Kimbell, of Kimbell-Hill Brick Co.; Charles Bonner, of Bonner-Marshall Co.; W. P. Varney, Hydraulic-Press Brick Co.; James J. Lyons, Peter Borah, of Meacham & Wright Brick Co.; F. W. Donahue, C. L. Rorick, Brick and Clay Record; D. H. Nichols, G. A. Olsen, ROCK PRODUCTS AND BUILDING MATERIALS.

S. E. Matter, of the Standard Salt and Cement Co., represented Duluth, Minn., retailers. He became so enraptured with the hills and springs that he decided to stay for a period after the meetings closed.

Isaac H. Tyler, of the Tyler Builders' Supply Co., found it an easy matter to make the trip from Louisville, Ky. He was present at every session.

Secretary R. L. Queisser, W. A. Fay, J. F. Leonard, R. P. Stoddard and Attorney Floyd E. Waite, of Cleveland, displayed in a genuine manner their sincerity in the campaign started by the S-A-F-E society. The builders' supply men of the "sixth city" are enthusiastic over the results of the new organization.

NEWS of the TRADE

Decrease in November Building.

Building statistics for November make a poor showing, but it is not so bad when one takes into consideration the fact that the principal cities of this country have for months and years been piling up a tremendous increase over the previously corresponding period.

Permits were taken out during the month just closed in 93 cities, according to official reports to Construction News, for the construction of 15,642 buildings involving a total estimated cost of \$36,186,915, against 17,814 buildings involving \$50,008,632, a decrease of 2,172 buildings and a decrease of \$13,821,717, or 27 per cent. The figures in detail are as follows:

City.	1914		1913		% Gain.	% Loss.
	No. of Bldgs.	Estimated Cost.	No. of Bldgs.	Estimated Cost.		
Chicago	840	\$ 6,512,150	849	\$ 6,491,000
Boston	418	3,234,000	489	6,905,000	..	45
New York (Boros Man. and Bronx)	592	2,506,257	708	4,538,851	..	45
Cleveland	843	2,152,545	670	1,231,640	75	..
Brooklyn	745	1,817,445	857	2,309,415	..	30
Philadelphia	855	1,240,530	1,063	2,086,565	..	39
Detroit	1,108	1,108,580	554	1,805,710	..	39
San Francisco	495	958,537	447	1,142,396	..	32
Los Angeles	682	785,210	1,155	1,200,158	..	34
Pittsburgh	118	777,308	238	698,617	11	..
St. Paul	170	710,497	156	647,682	9	..
Minneapolis	363	708,616	374	820,990	..	14
St. Louis	604	550,029	654	1,073,643	..	39
Peoria, Ill.	49	605,309	51	184,000	328	..
Milwaukee	296	591,583	272	1,454,410	..	56
Buffalo	272	498,000	275	580,000	..	14
Portland, Ore.	318	458,530	494	608,865	..	25
Worcester	105	494,124	114	299,688	41	..
Washington, D. C.	272	419,544	313	644,038	..	35
Hartford	82	399,885	94	1,071,045	..	39
Rochester	214	397,960	229	649,575	..	32
Columbus	141	377,355	173	398,770	..	5
Newark	158	373,527	198	649,371	..	39
Allentown, Pa.	16	366,035	36	91,800	398	..
Bridgeport	60	364,859	35	239,684	52	..
Kansas City, Mo.	290	341,320	277	284,672	68	..
Cincinnati	990	336,210	903	466,050	..	28
New Haven	102	315,755	60	214,475	47	..
Oakland, Calif.	344	281,769	217	414,225	..	39
Toledo	168	276,676	164	288,555	..	2
Baltimore	168	274,980	320	612,706	..	55
Tacoma	85	270,655	111	63,520	326	..
Indianapolis	358	265,190	320	479,711	..	45
Cedar Rapids, Ia.	45	250,000	49	197,000	4	..
Syracuse	139	235,465	100	182,330	39	..
Seattle	559	229,615	646	387,790	..	41
Atlanta, Ga.	288	214,339	261	278,904	..	18
San Antonio	137	210,575	227	62,800	104	..
Springfield, Mass.	94	197,502	94	951,395	..	79
Duluth	94	189,510	109	304,075	..	7
Akron	114	179,290	127	173,135	4	..
Grand Rapids, Mich.	195	171,435	135	275,384	..	28
San Diego	166	168,162	250	263,861	..	36
Berkeley	89	162,500	75	205,500	..	21
New Bedford	58	144,790	59	278,904	..	42
Denver	335	134,410	167	155,129	..	13
Dallas	79	133,850	189	876,015	..	84
Omaha	78	128,582	116	256,590	..	50
Memphis	172	122,375	227	111,371	..	37
Richmond, Va.	66	120,628	88	281,399	..	53
Sacramento	125	117,204	83	125,540	..	43
Erie	68	116,125	144	122,239	..	35
Pasadena	161	116,216	144	122,239	..	35
Ft. Worth	81	104,840	22	159,400	..	84
Ft. Wayne	38	100,975	39	102,160	..	1
Elizabeth, N. J.	40	95,288	45	111,435	..	13
Utica	39	95,500	64	142,525	..	34
Scranton	35	88,553	45	163,025	..	43
Lawrence	24	87,600	18	61,250	48	..
Sioux City	58	84,477	58	118,127	..	35
Youngstown	48	79,275	58	160,740	..	47
Trenton	78	79,239	79	101,650	..	28
Portland, Me.	80	77,050	20	73,495	6	..
Wilkes-Barre	136	74,928	39	212,428	..	66
Schenectady	47	75,156	..	273,920	..	50
New Orleans	..	69,632	..	89,716	..	66
Holyoke	15	65,200	17	191,780	..	66
Bayonne, N. J.	17	67,173	16	100,619	..	32
San Jose	45	57,143	37	85,550	60	..
Evansville, Ind.	85	57,088	72	103,405	..	44
Davenport	29	54,475	19	59,200	..	8
Spokane	83	56,890	68	78,610	..	29
Springfield, Ill.	36	56,100	27	41,425	33	..
Tampa	123	54,361	103	54,860	..	48
Dayton	46	48,338	42	111,975	..	59
Savannah	33	51,600	71	180,225	..	65
Kansas City, Kan.	61	50,485	60	69,708	..	19
Paterson	68	46,951	61	81,080	..	73
Saginaw	36	39,550	18	17,351	139	..
Lincoln, Neb.	35	39,475	32	145,628	..	48
Troy, N. Y.	35	37,450	36	87,180	..	39
St. Joseph, Mo.	49	36,410	49	129,515	..	73
Topeka	32	25,105	34	40,208	..	18
Nashville	136	28,655	78	78,946	..	57
Chattanooga	145	28,258	183	38,610	..	27
Pasaic	30	28,410	34	105,080	..	79
Altoona	31	20,925	46	65,959	..	63
Stockton, Calif.	36	20,510	26	22,450	..	65
Reading	17	20,350	34	55,650	..	19
Hoboken	13	19,075	10	24,679	..	45
South Bend, Ind.	12	16,975	11	29,825	..	65
Pueblo	16	9,270	11	26,667	..	41
Colorado Springs	23	7,531	22	12,795	..	41
Totals	15,642	\$36,186,915	17,814	\$50,008,632	..	37

There were increases in 19 cities and losses in 74 cities. People in the central west should find comfort in the fact that building operations in Chicago for November were a little ahead of a year ago, the same number of permits having been taken out, involving \$6,513,150, an increase of \$22,150 over the

same month a year ago. In keeping with this record is that of Cleveland, which had an increase of 73 per cent, Pittsburgh 11, St. Paul 9, Peoria 228, Worcester, Mass., 41, Allentown, Pa., 298, Bridgeport, Conn., 52, New Haven 47, Tacoma 326, Syracuse 29, San Antonio 104, Akron, Ohio, 4, Lawrence, Mass., 43, Portland, Me., 6, Bayonne, N. J., 93, San Jose 60, Springfield, Ill., 33, Saginaw 129, Troy, N. Y., 38. On the other hand, New York shows a decrease of 45 per cent, Boston 45, Brooklyn 30, Philadelphia 39, Detroit 39, St. Louis 39, Milwaukee 59, Buffalo 14, Washington 35, Hartford 63, Rochester 39, Columbus 5, Newark 32, Kansas City 63, Cincinnati 28, Toledo 2, Cedar Rapids, Ia., 49, Seattle 41, Springfield, Mass., 79, Grand Rapids, Mich., 38, New Bedford, Mass., 43, Omaha 50, Elizabeth 12, Utica 34, Scranton 42, Sioux City 28, Youngstown 47, Trenton 22, Wilkes-Barre 64, Schenectady 80, Holyoke 66, Evansville 44, Davenport 3, Tampa 48, Dayton 52, Savannah 65, Kansas City, Kan., 19, Paterson 42, Lincoln, Neb., 73, St. Joseph, Mo., 72, Topeka 13, Nashville 57, Chattanooga 27, Passaic 79, Altoona 68, Reading 65, Hoboken 19, South Bend 45, Pueblo 65, Colorado Springs 41, San Francisco 13, Los Angeles 34, Seattle 41, Minneapolis 14, Portland 25, Oakland, Cal., 32, Baltimore 55, Atlanta 18, Duluth 7, San Diego 36, Berkeley 21, Denver 13, Dallas 84, Fort Worth 34, New Orleans 50, Memphis 37, Richmond 53, Sacramento 43, Erie 35, Pasadena 4, Spokane 24 and Stockton, Cal., 39.

Kansas City Building Suffers.

Kansas City, Dec. 19.—The building industry of Kansas City has suffered greatly during 1914. There were 220 permits issued last month, with a valuation of \$341,220; November, 1913, produced 277 permits, estimated at \$934,672. The decrease amounts to \$593,452 or 175 per cent. It is also interesting to note that every month previous to August, 1914, ran ahead of the corresponding months for 1913. However, August, September, October and November fell far below and with the month of November included the permits for 1914 are over \$1,000,000 less than those of 1913.

At the present time there are several buildings proposed and the probabilities are that work will be commenced upon them as soon as the weather conditions permit. The proposed work includes several warehouse buildings, two hotels, a large office and loft building, beside several minor jobs. Most of the dealers in building material feel confident that business will again resume a normal aspect after the first of January.

The annual meeting of the Master Builders' Exchange was held Dec. 16. The newly elected officers are E. L. Marty, president; E. F. Dix, vice-president; M. Bridges, treasurer; C. H. Fristoe, J. M. Forrester, John Halero, directors.

JACKSON, TENN., RETAILERS RESTING.

Jackson, Tenn., Dec. 19.—The City Lumber Co. reports business quiet at the present time; in fact, the entire season has been dull. Mr. Fite, manager, looks for good spring business, with more interest than ever on cement products. The Central Lumber Co. finds a quiet market owing to winter weather conditions. Both of these companies handle a full line of building materials.

New York Market.

New York, Dec. 19.—Every department of the local building material market is keenly alive to the opportunities for quick orders emanating from the Thomas A. Edison fire of Dec. 9. Today the entire grounds have been cleared. Construction, according to M. D. Hutcheson, chief engineer of the great Edison establishment, will proceed at once with practically all the buildings of concrete. There will be some brick used, he said, but reinforced concrete will be an important element in the rebuilding, according to the plans of Mr. Edison, which, however, have not yet been fully worked out.

Portland cement is feeling the dullness in building construction, especially since the cold weather has shut off a large volume of public works business.

Harold Hammond, representing in this city the William K. Hammond Brick Co., when asked for an opinion as to the outlook in this market said:

"A great deal depends upon the freedom with which money will be made available to builders after the first of the year. All eyes are now being directed toward the stock market where full open trading has been resumed. If the favorable conditions attendant upon the opening are continued, and there now seems to be no reason why they should not be, construction will move ahead after the first of the year in pretty good shape. In the meantime dealers are slow about coming into the market, there is comparatively little common brick from the Hudson district lying here and there is not much active buying even at the low prices now prevailing, which is \$5.25 to \$5.50 for good brick with a possible \$6.00 as the market price for covered common brick."

A. Wilfred Tuthill, manager of the red brick department of the Sayre & Fisher Co., 261 Broadway, said:

"We look upon the situation with confidence. We are not sending any brick into the market for less than \$6.00 a thousand. Construction work undoubtedly is slack just now, but this condition cannot long endure. We are entering upon the worst building months of the year, but are inclined to discount any pessimistic talk. Conditions are improving, as far as sentiment is concerned. Our plant is operating on a moderate basis and the inquiry for first quarter business is of a character to make us believe that we have weathered the worst of the building depression and that we are approaching the upturn, if we are not already on the curve."

The apparent slump in local building construction is shown to have been over-estimated when it is shown that in the year just closing there have been 10,533 new building plans filed valued at \$116,870,610. Last year in the same period, from Jan. 1 to Dec. 11, 9,891 buildings were projected, the estimated cost of which was \$121,781,484. The gain in volume was 642 with a loss in value of \$5,110,874. Counting five per cent of the cost of a building as representing brick, this loss in value in practically one year's construction work in New York will account for 50,900,000 common brick or more than three times the loss in brick consumption as shown by the wholesale transactions at the West Fifty-second street docks this year.

The Miller Supply Co. is a new concern to deal in builders' supplies in Pittsburgh. Its incorporators are L. D., W. H., F. and H. B. Miller who have applied for a Pennsylvania charter.

The market place of the building material industry. Employment department, machinery wanted and for sale, etc. If your wants are not answered in this page, write a letter to this office.

THE FRANCIS PUBLISHING CO.
537 S. Dearborn Street Chicago, Illinois

:: THE :: BOURSE

Advertisements will be inserted in this section at the following rates:

For one insertion.....25 cents a line
For two insertions.....45 cents a line
For three insertions.....60 cents a line

Eight words of ordinary length make one line.
Headings count as two lines.
No display except the headings can be admitted.

Remittances should accompany the order. No extra charges for copy of paper containing the advertisement.

BUSINESS OPPORTUNITIES

YOU ARE MISSING SOMETHING

If you do not read the Classified ads each week. If you have something to sell or exchange, insert a small advertisement in the Classified Department. ROCK PRODUCTS AND BUILDING MATERIALS, Ellsworth Bldg., Chicago, Ill.

FOR SALE—6 acres granite with completely equipped crushing plant; freight rates and other conditions favorable. This is an exceptional bargain with reasonable terms, near Atlanta, Ga.

If interested in lime and crushed stone properties write me.

Address J. C. WATERHOUSE,
Tiffin, Ohio.

DO YOU WANT TO SELL OR TRADE

Your business? You can do it by laying your proposition before the people who would be interested by advertising in the Classified Department of ROCK PRODUCTS AND BUILDING MATERIALS.

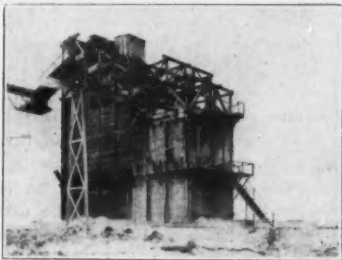
TYPEWRITERS, GUARANTEED PERFECT

On Trial. All Makes.
45 to 60% off. Quality sells itself. We save you money. THE E. W. HORTON CO., Bellevue, Ohio.

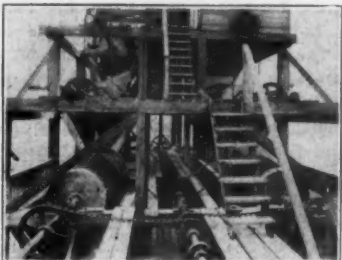
YOU READ THESE ADS.

So do many thousand others. Twice a month the eyes of the building material world read this paper. Why don't you advertise? Write to the Classified Department of ROCK PRODUCTS AND BUILDING MATERIALS, 537 South Dearborn St., Chicago, Ill.

FOR SALE DISPLACED PLANT



Gravel Plant (see cuts Buckbee design), used three months, capacity 1000 yds.
Corliss Engine, 24"x48", 18 ft. pulley.
Crushers, Gates, 8-6-5-3 with elevators and screens.
Well Drills, 1 Loomis, 1 Cyclone.
Rolls, Superior 36x16.



DOLESE & SHEPARD CO.
108 S. La Salle St., Chicago

EMPLOYMENT WANTED

NOW IS THE TIME TO LOOK AROUND

And see if you have any second-hand machinery, equipment or something you would like to sell or exchange. All you have to do is to place your advertisement in ROCK PRODUCTS AND BUILDING MATERIALS to reach the very people who would be interested. Try it.

WANTED—Position by good practical lime man. Fifteen years' experience. Best of references. East preferred. Address Box 1026, care ROCK PRODUCTS AND BUILDING MATERIALS.

WANTED—Position by sand-lime brick man of many years' experience. Thorough knowledge of manufacturing. Best of references. Address Box 1012, care ROCK PRODUCTS AND BUILDING MATERIALS.

FIFTY CENTS

Is all it would cost to place an ad of 16 words for one insertion in the Classified Department.

WANTED—Position as superintendent; 20 years' experience erecting and operating stone crushing plants. Reference. Address Box 1023, care ROCK PRODUCTS AND BUILDING MATERIALS.

EMPLOYEES WANTED

HELP! HELP! HELP!

LET US HELP YOU.

We want employers who are looking for good help to advertise in the "Wanted Employees" column, because we know that they will get good results. ROCK PRODUCTS AND BUILDING MATERIALS.

WANTED—General superintendent for quarry and lime manufacturing plant, also hydrated lime plant. State full particulars in first letter. Address Box 1025, care ROCK PRODUCTS AND BUILDING MATERIALS.

* ARE YOU LOOKING FOR EMPLOYMENT?

A small advertisement in the Employment column will make your wants known and help you to get a position. No difference what kind of a job you want—advertise in ROCK PRODUCTS AND BUILDING MATERIALS, as the paper is read by the people you want to reach. QUICK RETURNS.

RAILS

all sizes—small or large lots. New and relaying. We are familiar with quarry requirements and know just what you need. Frogs, switches, splices and all track accessories. Immediate shipment from stock.

L. B. FOSTER CO.

PARK BUILDING PITTSBURGH, PA.

G. P. GRIMSLEY, Ph. D. MINING AND CONSULTING GEOLOGIST

Formerly Asst. State Geologist W. Va.; Formerly Geologist on Ohio, Michigan and Kansas Geological Surveys; Ex-Manager National Limestone Company. Consulting Geologist National Limestone Company.

Examination, Reports, Consultation on development
Limestone, Clay, Gypsum and Coal.

Room 1105 Wyandotte Bldg. : Columbus, Ohio

Paper Bags
of
Quality.

For All Purposes
The Jaite Company
Benton, Ohio

Strongest, Most Flexible

MACHINERY FOR SALE

NOW IS THE TIME TO BUY.

Want a new or second-hand machine?
Want electric machinery of any kind?
Want locomotives, cars, rails, etc.?
Want a retail yard or a manufacturing plant?
Advertise your wants in the Classified Department of ROCK PRODUCTS AND BUILDING MATERIALS. You will have your "Wants" answered.

FOR SALE—Rest empty cement bag baler, smallest price. Also brick and block machines. Address W. BARTEN, Gordon, Nebr.

FOR SALE—Two second-hand No. 8 Krupp Ball Mills, fully equipped, in excellent condition. SECURITY CEMENT & LIME CO., Hagerstown, Md.

FOR SALE—Four 36-inch Vertical Emery Mills for grinding gypsum or like product. Will sell these at a bargain. Write for particulars. KELLY PLASTER CO., Sandusky, Ohio.

FOR SALE AT ATTRACTIVE PRICES.

One Gates No. 3 Jaw 15"x9" crusher (Allis Chalmers) used in experimental work only six weeks.
One Stevenson 8' iron frame clay-working pan used in experimental work only six weeks; also one link belt chain drive and sprocket.
Four 100 H. P. 8" Atlas Tubular boilers with 40' stacks—30' diameter each.
Eight industrial cars 24" gauge, one ton capacity; side dumps; used only one year.
One 7' Stine coal mine fan.
One switching locomotive tender tank.
48 cast iron gates with frames for stone or coal bins, openings 18 1/2"x18 1/2", weight 890 pounds each.
THE COLUMBUS IRON & STEEL CO., Columbus, Ohio.

A FEW BARGAINS

Hoisting Engine, belted, Allis Chalmers.
Hoisting Engine, 8 1/2"x10, D. C. D. D.
Hoisting Engine, 7x10, D. C. D. D.
Crusher, Reliance, 12x24 jaw.
Crusher, Kennedy, No. 6 Gyratory (Manganese head and concaves).
Crusher, Gates, No. 4, Gyratory.
Crusher, Gates, No. 3, Gyratory.
Crusher, Gates, No. 2, Gyratory (Manganese).
Bucket, Hayward 1 yd. Clam Shell.
Bucket, Hayward 1 yd. Orange Peel.
Derricks, Stiff Leg, 60' boom.
Locomotive, standard gauge, 8x12, Porter.
Locomotive, standard gauge, 24 ton, 14x22.
Locomotive, 36" gauge, 9x14, Porter.
Steam Shovel, 60 ton Marion, 2 1/2 yd. (Bargain).
Steam Shovel, Thew, No. 0 on traction wheels.
Steam Shovel, Thew, No. 2, on trucks.
6 Schmidt Tube Mills, No. 14, No. 16 and No. 18.
3 Hammer Mills, cap. 5 to 10 ton per hour.
1 Negley Slack Line Excavator 24 cu. ft. bucket.
1 complete crushing plant No. 5, shafting, belting, etc.
1 Locomotive crane, 10 ton 1/2 yd. Clam Shell Bucket.

We handle a complete line of Quarry, Sand and Gravel and Cement Machinery. Give us an opportunity to submit bids on your requirements. Write

**WILLIS SHAW
MACHINERY CO.,**

New York Life Bldg., CHICAGO, ILL.

Chicago Building Continues.

Building operations in Chicago continue to be on a large scale, despite the recent severe weather, which generally slows up building. Thus during the last week there were 102 permits issued by the city building department, the estimated cost being \$1,313,700, as against 85 permits, costing \$782,200, for the corresponding week a year ago. This is an increase of 17 in number and \$531,500 in cost—a remarkably fine showing under the circumstances.

The residence of Alderman Henry E. Capitain, of the Twenty-fifth Ward, at the northeast corner of Kenilworth and Ashland, in Rogers Park, is to become the site for a \$100,000 church to be erected by Sixteenth Church of Christ, Scientist.

The limit on the size of frame buildings will be reduced more than one-half if the recommendations of the city building department are adopted by the council.

The proposal is made to eradicate the fire hazard as much as possible without altogether preventing the erection of frame residences. Within the fire limits frame construction is prohibited. An ordinance extending the fire limits is now pending before the council buildings committee.

Robert Knight, deputy building commissioner, has recommended the passage of this measure and also the adoption of more stringent regulations for frame buildings in outlying sections. He has submitted a report on the subject to the subcommittee. The subcommittee is making an investigation.

The principal features of Mr. Knight's plan for regulating frame structures are:

Limit the width to 25 feet, the length to 45 feet, and the height to 35 feet.

Require a masonry foundation for all buildings over one story.

Prohibit the erection of frame buildings except for residence purposes.

Require a space of five feet between the building and the lot line on each side except the front.

Existing ordinances permit the erection of frame structures 40 feet wide, 70 feet long, and from 40 to 45 feet high. Frame construction can be used for stores and warehouses as well as for residences.

The Wilson avenue district will have a new family hotel to cost \$175,000. G. P. Racine, of G. P. Racine & Co., real estate operators, has purchased from the estate of William Deering the vacant land on Racine avenue, half a block north of Wilson avenue, 100x165 feet, for \$13,000, and will construct an eight-story fireproof structure containing 110 rooms, and equipped with every convenience. Ground will be broken March 15.

Milwaukee Situation Bright.

Milwaukee, Wis., Dec. 19.—Although building operations in Milwaukee have been picking up slightly during the past week, indications are that the building investment for the year will show a decline of about 18 per cent. The month of October showed a loss of 50 per cent over the corresponding period in 1913, while the investment made during November registered a decline of 59 per cent. The unusual decline during these two months is due mainly to the fact that several large building projects were started a year ago, while only the ordinary run of building was started this fall. The number of permits issued show only a moderate decline. During the month of November there were 236 permits granted for structures to cost \$591,583, as compared with 273 permits and an investment of \$1,454,410 during November, 1913.

Building Inspector W. D. Harper says that many large building projects planned for this fall have been carried over and will be completed next spring. This leads material men and contractors to believe that there ought to be plenty of activity in the building field next spring. General business conditions in

Milwaukee are showing signs of improvement and a more optimistic view of the situation is being taken by most people.

One of the most optimistic men in the Milwaukee building material field is W. H. Pipkorn, president of the W. H. Pipkorn Co. Mr. Pipkorn says that present business is satisfactory and that much of the depression has been caused by pessimistic talk. He said: "Conditions are normal for this season of the year. In fact, we have been finding that business is somewhat ahead of last year. While the total building investment showed a falling off, as compared with last year, the building carried on was of a class that developed a great deal of business. We are now cleaning up our books and working hard on our inventory. The figures disclosed thus far are very satisfactory, and I am inclined to think that most building material concerns will find themselves in the same situation. While it is too early to predict much in regard to the spring trade, I am confident that unless something unforeseen happens the spring business will show a gain over that of the past season."

Pittsburgh Quiet; Prospects Bright.

Pittsburgh, Dec. 19.—This is fine weather for taking inventory, but very bad weather for business. Retailers are taking things easy, making as few deliveries as possible on the icy pavements and waiting patiently for a long promised boom in business to come along.

The industrial situation in the Pittsburgh district is getting so much better as to warrant the belief that very shortly after the first of the year there will be something doing in earnest. Steel mills are increasing their forces, which they can easily do, as they were only operating from 25 to 35 per cent capacity. The cold weather of the past week and the big rise in the rivers put a spur to the coal business and many more mines are operating than last month. The window glass and plate glass business is almost on a boom. Everything looks as if concerns in these lines would have a big year ahead of them. Building, of course, is at a low ebb.

Everything Quiet in Louisville.

Louisville, Ky., Dec. 19.—Zero weather since the middle of December has practically tied up things for the time being with the material men of Louisville. Steady freezing weather has made brick laying, concrete work and practically all outside work impossible for the time being; even plasterers have been compelled to stop work. The trade has had a very successful fall, however, and is very well satisfied with present conditions, which are seasonable and to be expected. In fact, bad weather held off later than usual this fall.

The local sand dealers have about closed operation for this season and have withdrawn their sand digging boats from the Ohio River. Freezing weather made it impossible to operate on the river.

NASHVILLE EXCHANGE ELECTS.

Nashville, Tenn., Dec. 19.—The sixth annual meeting of the Nashville Builders' Exchange was recently held and officers for 1915 were elected. The exchange now has a membership of 125. R. T. Creighton, so long the useful president, declined to serve further. James A. Daugherty, lately secretary, was made president. J. W. Patrick was re-elected first vice-president; Jos. H. Peter, second vice-president; William F. Holt, treasurer, and H. Lee Parish continues as secretary, selected by the board. The board of directors includes: H. E. Parmer, tin; F. J. Erhart, painting; W. Bush Sneed, brick; W. J. Sullivan, mill work; Fred E. Fisher, concrete; S. J. LeSueur, plastering; DeWitt Bush, foundation; Robt. Jakes, steel; W. F. Holt, general contracting, and Joseph H. Peter, cut stone.

Michigan News Notes.

Albion.—The Cement Products Co. plant at Battle Creek will be removed to this city.

Jackson.—After June 1, union masons and bricklayers will lay no more prison made brick, according to a resolution passed by the masons and bricklayers at the state convention here.

Detroit.—City Controller Engel will ask the common council at once to authorize the issuance of \$1,478,000 worth of city bonds at four and one-half per cent interest. The bonds will be sold to raise money for public lighting, schools, tuberculosis hospital and public buildings and will be proportioned as follows: Public lighting, \$350,000, 10-year bonds; public building, \$408,000, 10-year bonds, board of education, \$550,000, 30-year bonds, and tuberculosis hospital, \$170,000, 30-year bonds. These will be the first bonds issued under the new charter amendment, which permits the city to pay as high as five per cent interest and to issue bonds for any length of time, and in any amount from \$100 up. The controller plans to advertise the sale of the bonds Jan. 1.

November building was light, estimates for the month being \$700,000 below 1913. Building operations for which permits were taken out in November were covered by estimates aggregating \$1,103,580, which is \$700,000 less than the same month of 1913.

James Quinn, Jr., who represents the Kelly Plaster Co., of Sandusky, was a Detroit visitor last week. Mr. Quinn makes his residence in Grand Rapids.

C. B. Elwood, representing the Ohio and Western Lime Co., was in the city this week.

Highland Park, the progressive village joining Detroit on the north and in which is located the immense Ford Motor Co.'s works, has made the greatest progress of any suburb this year. Building permits in Highland Park show a value of \$3,000,000 and it is expected that before the year is finished this sum will be increased by \$500,000, according to L. D. Beckley, superintendent of public work. Additions to the Ford plant have formed a large percentage of the total. The bulk of the remainder has gone into business blocks ranging in value from \$8,000 to \$20,000. Since the inauguration of the \$5.00-a-day plan at the Ford plant scores of the employees have begun the erection of their own homes.

Over the river in Canada some big things are on the fore, steel for the extension of the Essex Terminal Railway into Ojibway, where will be located the \$10,000,000-plant of the United States Steel Corporation, being laid this week. The work with the grading will cost more than \$100,000 and will employ more than 300 men and 125 teams.

PACIFIC COAST BUILDING.

Building is reported generally quiet in all the Pacific coast cities, this being particularly true of brick and concrete construction. Official reports from the various cities show that the building operations begun in the coast cities during the month of November averaged from 25 to 50 per cent less than in the same month of last year. The slackness is somewhat offset in San Francisco by the large amount of Panama-Pacific Exposition building and of municipal construction under way. Bonds for \$5,800,000 for state buildings at San Francisco, Berkeley and Sacramento and for \$10,000,000 were authorized by the voters at the late election, but these sums will not be available for some time.

J. B. Winstanley & Co., building material dealers of Portland, Ore., have opened retail sales rooms and offices at East Twenty-fifth and East Broadway, Portland.

The Laufman Sales Co. has opened offices for the sale of building materials in the Northwestern Bank Building, Portland, Ore.

"BERKELEY"
Hydrated
LIME



ASK YOUR
DEALER



"SECURITY"
PORTLAND
CEMENT

Security Cement & Lime Co.
Main Offices, Hagerstown, Md.

Reduce Your Operating Expense

by using Wire Rope that will do the most work for each dollar of its cost. This can be accomplished by the use of



Reg. U. S. Pat. Off.

because **Hercules** Wire Rope not only has great strength, but it is also elastic, flexible, tough and durable.

When you buy **Hercules** Rope you are not experimenting, for it has been proving its durability by actual service for many years.

Hercules Wire Rope is always made with one red strand for identification purposes.

Established 1857

A. Leschen & Sons Rope Co.
St. Louis, Missouri

New York Chicago Denver Salt Lake City San Francisco



SALES OFFICE:
Liggett Bldg., St. Louis

THE Standard Brands

OF
Portland Cement
Lightest in Color
Highest Tensile Strength

ALWAYS UNIFORM

Always the same high quality. Prompt shipment guaranteed at all times and made possible, as each mill is located within switching limits of the two greatest railroad centers of the West. You are assured of your orders being promptly filled.



SALES OFFICE:
Long Bldg., Kansas City

MANUFACTURED BY

Union Sand & Material Co.

ST. LOUIS
Liggett Bldg.

KANSAS CITY
Long Bldg.

MEMPHIS
Tenn. Trust Bldg.

WETHRPRUFE

Open
Mouth



Bates
Valve

We make these bags in one-fifth barrel size cheap enough to use and strong

enough to carry seventy-six lbs. cement to destination. ASK FOR THEM.

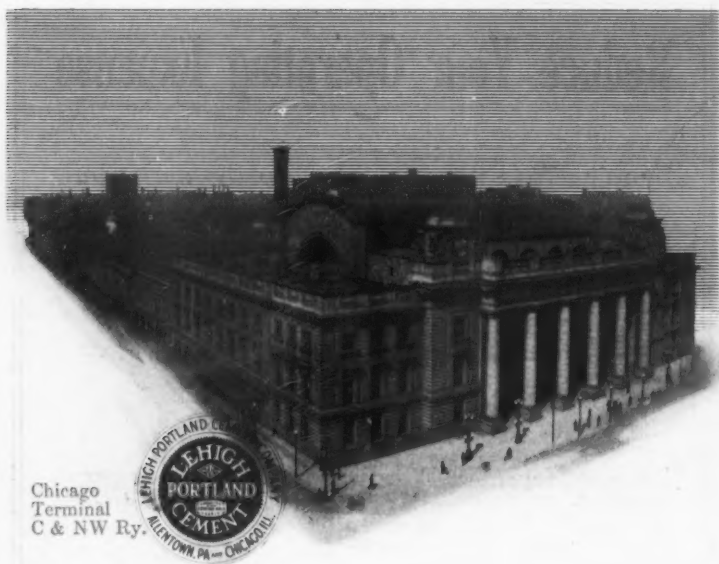
WATERPROOF

An Extra Heavy, Extra Strong
WATERPROOF PAPER BAG
For Cement, Plaster, Lime, Etc.

West Jersey Bag Co.

Camden, N. J.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



RAILWAY WORK

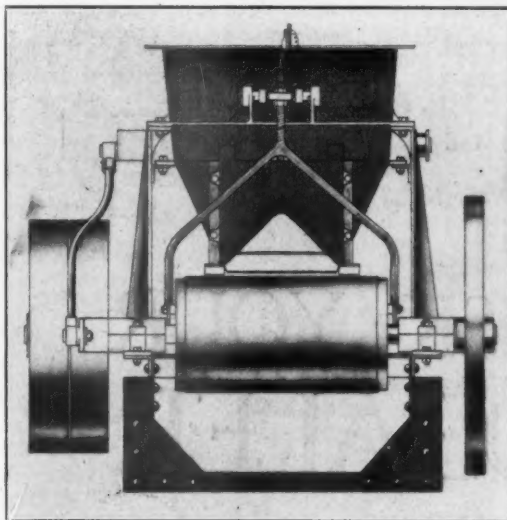
Probably no class of construction is so varied as the railroad work of today.

But from the ties, trestles and bridges which carry its rails to the terminals which care for its patrons one requirement is paramount—permanence.

Because of this feature in concrete, in addition to the fact of its adaptability to almost any class of work, it has been chosen for practically all recent important railroad construction.

Concrete's The Thing Lehigh's The Cement

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



To weigh and regulate the flow of material traveling in a continuous stream over a conveyor.

The Schaffer Poidometers ARE ESPECIALLY ADAPTED FOR

Uniting different materials in correct proportions.
Delivering a predetermined quantity of materials to pulverizing or grinding machinery.
Feeding crushed coal to boilers.
Loading materials into cars or vessels and giving a record of the quantity loaded.

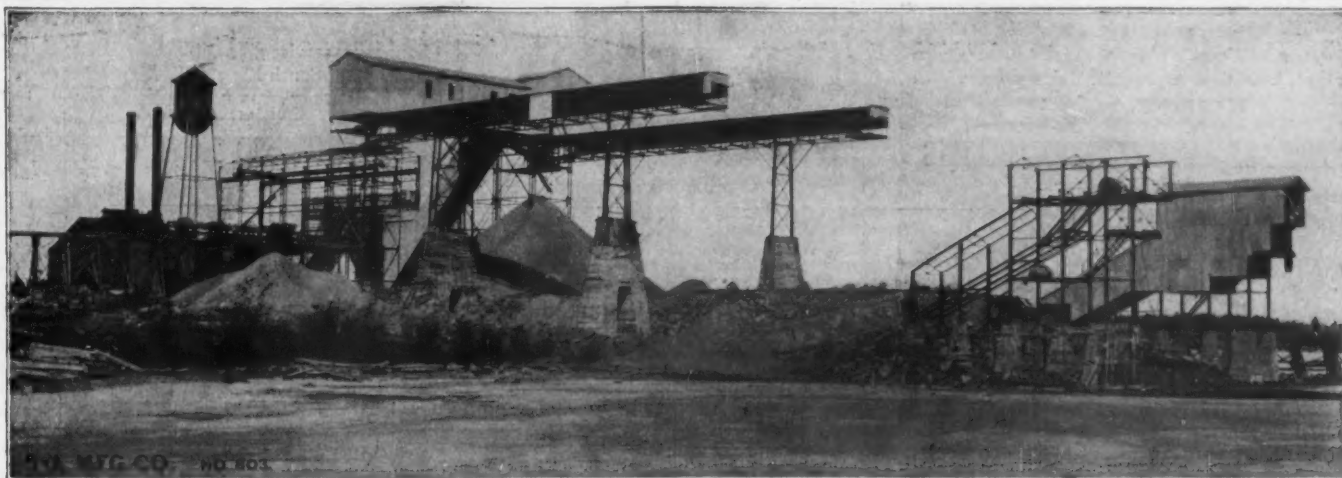
The Schaffer Eng. and Equip. Co.
TIFFIN, OHIO



A Dependable Product

Sold Thru Dealers

Wheeling Wall Plaster Co.
WHEELING, W. VA.



Cutting the Cost of Crushed Rock with "S-A" Conveyors—

We design and equip Rock Crushing Plants, Sand and Gravel Washing Plants, Screening Plants, Storage Systems.

We manufacture Conveyors, Elevators, Transmission Equipment, Gates, Feeders, Car Pullers, Etc.

This Immense Crushing Plant described in "Labor Saver" No. 64. Write for your copy. It's free.

In manufacturing the conveyor equipment for this plant, there were but two requirements—large capacity and absolute reliability. "S-A" Belt Conveyors, only, could fully measure up to these demands.

The crushing capacity of this plant is 500 cubic yards per hour with a storage capacity of 80,000 cubic yards. A duplicate system of "S-A" Belt Conveyors delivers into storage, "S-A" Trippers distributing from the two galleries, shown above. Another pair of 40-inch "S-A" Belt Conveyors operating in tunnels withdraw from storage and deliver over automatic weighing machines to lake vessels at a rate of 1500 cubic yards per hour.

Our Engineering Department is at your service. Write.

Stephens-Adamson Mfg. Co.

Conveying Engineers

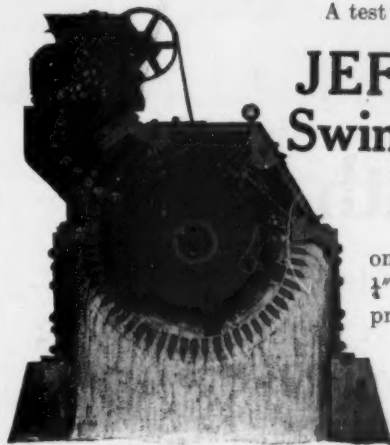
Aurora, Illinois

NEW YORK BOSTON CHICAGO LOS ANGELES PITTSBURGH SALT LAKE CITY ST. LOUIS TORONTO

One Operation Gives A Fine Uniform Product

A test recently made with a

JEFFREY Type D Swing Hammer Pulverizer



on Dry Limestone using $\frac{1}{4}$ " screen bars produced a product

99½% — 10 Mesh
85% — 40 Mesh
62½% — 100 Mesh

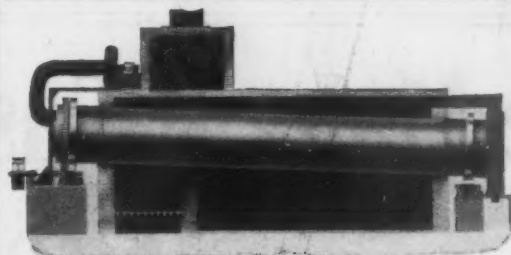
Sectional View of Type D Pulverizer, Showing Method of Reducing Material.

The above results are conclusive evidence that the grinding is done in suspension and not on the bars.

Send us a 50 lb. sample of your product for test, also write for Bulletin No. 132 giving full particulars about this machine.

Jeffrey Mfg. Co., Columbus, Ohio

New York Philadelphia Charlestown, W. Va. Duluth Denver
Boston Pittsburgh Birmingham Chicago Montreal



We make the largest variety of
MECHANICAL DRYERS

Write for
Catalog
No. 16

We are also Engineers and Manufacturers of
Car Hauls Feeders
Crushers and Pulverizers Mining Machinery
Drop Forged Chain Mixing Machinery
Elevators and Conveyors Sand Plants
Soft Mud Brick Machinery Screens

THE C. O. BARTLETT & SNOW CO., Cleveland, Ohio



TRADE MARK.

SAME Maumee Compound

For water-proofing cement but a new price

4c Per
Pound

The Maumee Chemical Co.

PORT CLINTON, OHIO
Formerly — TOLEDO, OHIO

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

New Gravel Washing Plant of Reinert Bros. (shown below), located at Algonquin, Ills., equipped with

"REXALL"

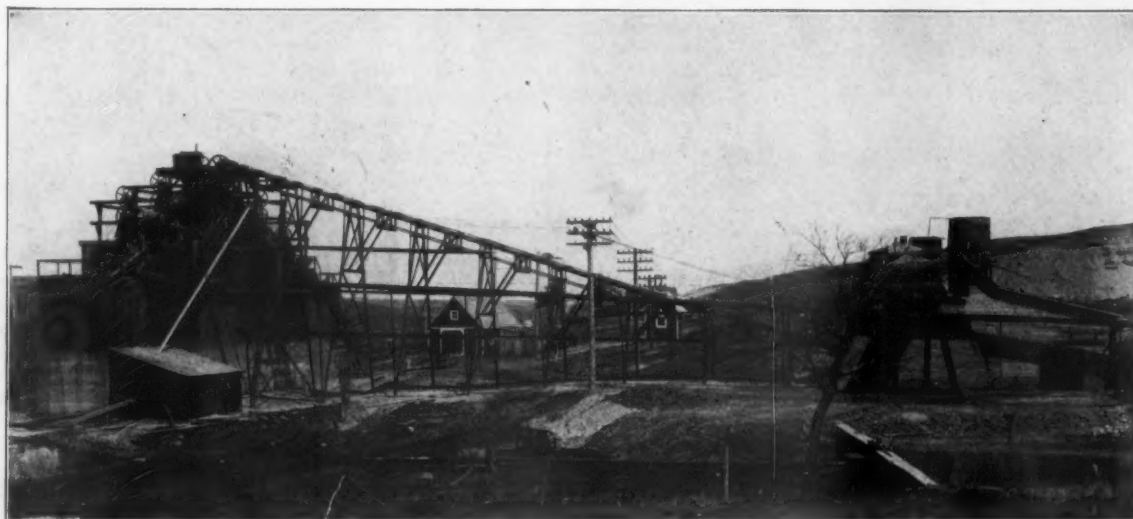
DOUBLE STITCHED CONVEYOR BELTING

**THE REASON
WHY** 

Four years service given at former plant of this company at South Elgin, Ills., equipped with 30"

"REXALL"

DOUBLE STITCHED CONVEYOR BELTING



MANUFACTURED BY

IMPERIAL BELTING CO. CHICAGO

We Make It Easy For You to Sell

Kno-Burn

Expanded Metal Lath

Every order we receive for Kno-Burn is sold through dealers exclusively. We will not sell the consumer direct. By this policy, Mr. Building Supply Dealer, you are protected and are sure of your profits. Our national advertising is creating a constant demand for Kno-Burn.

Architects and builders everywhere specify it. It is the logical choice of the careful builder for all kinds of interior plaster work and exterior stucco, because it absolutely insures walls that are permanent and smooth.

Why not handle Kno-Burn and get your share of the profits? Send for details and prices and booklet 293.

North Western Expanded Metal Co., 929 Old Colony Bldg., CHICAGO, U. S. A.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

A. R. B. A. CONVENTION DRAWS THOUSANDS.

(Continued from Page 23.)

the Union Stock Yards, of the various kinds of materials handled by him, had a conference room at the La Salle hotel, where a thousand or more visitors from all over the United States and Canada dropped in to get better acquainted with this aggressive road material expert. One of the most catchy things at the show, as well as at the La Salle hotel, was Mr. Baker's sign, "Welcome—John Baker, Jr.," which made the visitors feel that somebody in Chicago was really glad to see them. This was fostered by the 14 salesmen from all parts of the United States, who came to join with Mr. Baker in assisting their customers every where and to see all there was to see at the big convention. A happy thought of Mr. Baker's was the running of six or eight automobiles from the downtown district to the meeting and exhibit halls at the stockyards, thus making it easier for strangers to get about. This was greatly appreciated by them. The men of the Baker family registered here and actively connected with the business were: W. H. Kershaw, manager Eastern division, New York City; D. A. Kennedy, manager Boston office, Boston; M. E. McDonough, manager Philadelphia office, Philadelphia; J. J. Gratland, manager Buffalo office, Buffalo; J. D. Forrester, manager Kansas City office,

of an effective compensation law would be impossible.

The decision turned on the contention that the law had the effect of depriving employees and employers of certain rights guaranteed them by the constitution to recover for injuries, etc. The court granted that the employees have the right or privilege to waive this constitutionally given right, but that in its operation the compensation law would have automatically forced them to waive these rights or be denied cause of recovery, a thing which the court held was contrary to the constitution. The minority opinion referred to this phase of the case as a conjecture and stated that the three judges who signed it were of the opinion that the majority was not making sufficient distinction between elective and compulsory requirements.

Tire Abuses Discussed by Expert.

Causes and Effects of Overloading and Overspeeding in the Truck Tire Field.

"Overloading and overspeeding trucks are prime causes of premature solid tire breakdowns—there is increased expense for the truck user, 'time out' for frequent renewals, controversies in regard to adjustments, premature discard of tires, and dissatisfaction with trucks." S. V. Norton, manager of the truck tire sales for the B. F. Goodrich Co., thus sums

proper or disproportioned tire equipment or to excessive or poorly arranged loads. Trucks are often overloaded owing to the ignorance of the owner as to what his trucks can safely carry. Loads may be placed too far back or forward on the body of the truck even though the loads are within the limits of the tire schedule of carrying capacities.

"Tire equipment may be disproportioned; tires may be too large on one axle and too small on the other, or the body may be too large for the tires. A large body may be allowed to pass unquestioned by a truck agent who is anxious to clinch a sale. This danger may not have been fully explained by the truck salesman when the truck was purchased or the owner may be too occupied to know what is going on. The ignorance or indifference of the driver may also be causes of overloaded trucks.

"One effect of the widespread abuse of tires through overspeeding and overloading is a stimulation for better tires to meet the present conditions. Tire makers are usually the 'goats' when a truck user becomes dissatisfied with his tires. The defects caused by overloading or overspeeding are usually brought home to the tire manufacturer. However, tire makers are meeting conditions by educating all concerned in the proper care of tires, by adopting more rational guarantees and by improving the tires themselves to meet every possible condition of service."



"CABINET" OF JOHN BAKER, JR., AT THE LASALLE HOTEL.



BOOTH OF JOHN BAKER, JR., AT INTERNATIONAL AMPHITHEATRE.

Kansas City; C. H. Draney, manager Denver office, Denver; George H. Hunt, sales manager, Chicago; P. S. Coyne, manager Minneapolis office, Minneapolis; James T. Ware, Kansas City; W. E. Tyer, Pittsburgh; T. A. Hickey, Milwaukee; D. H. Hogan, St. Louis; H. E. Lersch, Chicago; Frank Brace, Chicago.

You will see the boys' pictures on this page—pick them out. The last row is composed of what is supposed to be the "cabinet" of this well known institution. John Baker, Jr., is the central figure; to his right are Forrester and Hunt; to his left are Kennedy and Kershaw.

WORKMEN'S COMPENSATION LAW UNCONSTITUTIONAL.

Louisville, Ky., Dec. 19.—The Kentucky court of appeals on Dec. 11 held the workmen's compensation law, enacted at the 1914 session of the legislature and of which much was expected, unconstitutional. The law was to have gone into effect between employers and employees on Jan. 1, 1915. The majority opinion of the court, which was divided, suggested the probability that the legislature could pass a law which would be constitutional. The finding of the minority reached the conclusion that under the present constitution and the decision by the majority, passage

up his paper on "The Causes and Effects of Overloading and Overspeeding in the Truck Tire Field," recently read at the convention of the Motor Truck Club of America held in Detroit.

"The immediate effect of overloading and overspeeding," said Mr. Norton, "is premature tire destruction due to a greater liability to cuts, base separation from excess loads, friction and strain of skidding, weakening of a dual tire if the mate is injured, and overheating with consequent disintegration of the rubber. Truck owners naturally desire to get as much work as possible out of their trucks and they may be led to overspeed them. If a truck owner wants to make 'intensive deliveries' he must pay for overspeeding in his tire bills. However, the trucks are often overspeeded without the owner's knowledge, owing to the driver's desire to make a good showing either with the loaded truck or by returning from a trip in quick time. Often drivers speed merely for the sake of the spare time gained after the load is delivered.

"Overspeeding, as a rule, is entirely unnecessary, as it need not be due to the absence of a governor or to the power of the truck. Down grades, easy riding, lack of obstacles and extra speed in car trucks all lead drivers to overspeed.

"The causes of overloading are usually due to im-

The B. F. Goodrich Co., for instance, has prepared a series of folders which deal at length with the common causes of tire abuses and remedies for such abuses. These folders, which will be sent to any truck user upon request, cover the following causes of truck tire breakdowns: "Neglected Cuts," "Overloading," "Running in Car Tracks," "Bad Roads," "Skidding," "Anti-skid Devices," "Wheels Out of Alignment" and "Overspeeding." These valuable pamphlets are distributed from the Goodrich branches in all principal cities or from the factory at Akron, Ohio.

Goff Co.'s 1915 Calendar.

The trade supplied by the James C. Goff Co., Providence, R. I., has been supplied with a beautiful 1915 calendar, attractively printed and finished for hanging with ribbon and corded silk. The principal feature of the calendar is a genuine Barbizon print from the original painting of "November Evening," by Edwin Lamasure. Artistically embossed upon the first sheet of the calendar pad is the New Year's wish of the James C. Goff Co. in these words, "Your heart's desires be with you—1915."

N. B. S. A.

Circulars Announce Convention.

N. B. S. A. Officers Working for Interesting Program at Next Meeting.

That nothing is to be left undone in an effort to secure a large, representative gathering of building material dealers at the coming convention of the National Builders' Supply Association is evidenced by the activity now being displayed by the officers and members of that association.

Following in the wake of the "proclamation," which was issued a few weeks ago, and which was received by over 7,500 building material dealers throughout the country, announcement No. 2 is now in the mails, and in the course of a few days will be in the hands of these same dealers.

This circular deals with the cement question as it affects the dealer and asks of the dealer that he furnish the information which is requested therein with the purpose in view of handling this subject in an intelligent manner at the convention. The circular follows:

"Do the manufacturers of Portland cement know how much of their product is marketed through the dealer?"

"Strange though it may seem, they do not."

"Do the manufacturers of Portland cement realize the power of the dealer to bring the consumption of Portland cement up to the capacity of the mills?"

"Only in a very feeble way."

"The Portland cement manufacturers are asleep. They need a mental jolt, and if you will answer the questions on the enclosed card and return it to headquarters, we will not only 'wake them up' to the dealers' interests, but boom the cement business as it has never been boomed before. How?"

"The answer will be awaiting you at the convention to be held at the Hotel Sherman, Chicago, on Monday and Tuesday, Feb. 8 and 9, 1915."

"Better make your reservation now, for with the cement show and other meetings going on at the same time, hotels are liable to be taxed for accommodations."

"The information given on this sheet will be treated as strictly confidential, and the various answers tabulated by an auditor having no connection with the manufacturers of or dealers in Portland cement."

"The information thus secured will be used in securing a betterment in the conditions surrounding the marketing of Portland cement."

"How much Portland cement did you sell in 1913?"

"Is the sale of Portland cement a profitable part of your business?"

"In what way could you increase the use of Portland cement in your locality, providing it paid you to become interested in boosting its sale?"

"(Signed)_____"

The main objective from a successful gathering of the information requested should be easily discernable to the building supply dealer, and it is the hope of the officers of the N. B. S. A. that they will respond unanimously and follow up their response with their attendance at the convention to assist in digesting the information thus secured.

An innovation will be inaugurated at the N. B. S. A. convention. In addition to the general convention hall, there will be a number of rooms set apart as headquarters for the different departments of the building supply men's business. Already arrangements have been made for the following departments to have headquarters of their own: Lime, cement, plaster, brick and other clay products, specialties.

These various rooms will really be miniature conventions for a free and open discussion by the interested ones who attend.

Greetings.

My Christmas wish to the members of the National Builders' Supply Association is that they continue to work for and have an abiding faith in the ultimate happy solution of all those problems which have confronted and vexed our industry during the year now closing.

EDWARD K. CORMACK.

TRAFFIC NEWS

Commission Favors Rate Increase.

Washington, D. C., Dec. 18.—With Chairman Harlan and Commissioner Clements dissenting, the Interstate Commerce Commission today granted the five per cent increase, to be made on ten days' notice, with these exceptions: Rail-lake-and-rail, lake-and-rail, hard and soft coal, coke, iron ore, and rates governed by unexpired orders of the commission. Increases on building material rates are permitted in the following language:

"In our original report we declined, for reasons there stated, to allow increased rates in Central

Freight Association territory on cement, starch, brick, tile, clay, and plasters. On further consideration in the light of the existing situation these rates may be increased throughout official classification territory under the limitations herein set forth.

"Joint rates between official classification territory on the one hand and southeastern territory, the Southwest and points on or east of the Missouri river, on the other, may be increased not to exceed five per cent of the division of the rate accruing to the carriers in official classification territory."

"Interstate rates to and from New England from and to points in trunk line or Central Freight Association territory, where necessary to preserve established relationships between points or ports in New England and points or ports in trunk line territory, may be increased not to exceed five per cent."

"Subject to the maintenance of the established Atlantic port differentials, rates to and from New York may be increased not to exceed five per cent, and rates to and from Portland, Boston, Philadelphia, and Baltimore may be increased to the extent necessary to maintain said differentials."

Limit Imposed on Increases.

"Except as otherwise specified, rates in official classification territory may be increased by not more than five per cent; but rates increased since July 29, 1914, may not now be again increased so as to exceed those then in effect by an aggregate of more than five per cent of the intraterritorial rate, or of the portion or division of the interterritorial rate accruing to the road or roads in official classification territory, as the case may be."

"If fractions in excess of one-half a mill are rounded upward, fractions less than one-half a mill are to be discarded."

The formal order issued by the commission follows:

"It is ordered that respondents herein be, and they are hereby, authorized to publish and file, by not less than ten days' notice to the interstate commerce commission and to the general public in the manner prescribed in section 6 of the act to regulate commerce, schedules of rates which do not exceed the limits or transgress the limitations stated and prescribed in said report."

"It is further ordered that the permission hereby granted does not waive any of the requirements of the commission's published rules relative to the construction and filing of tariff publications, nor any of the provisions of the act to regulate commerce, as amended, except as to the notice to be given."

NATIONAL BUILDERS' SUPPLY ASSOCIATION.

Chamber of Commerce Bldg.

Chicago, Ill.

Application for Membership.

The undersigned being heartily in accord with the "Constitution" and eligible to membership in the National Builders' Supply Association under requirements of Section I, Article 3 (ACTIVE), or in Section I, Article 4 (ASSOCIATE), does hereby apply for membership:

Firm name.....

Signed by.....

P. O. Address.....

Date.....

Officers.

President—Edw. K. Cormack, Chicago.
Treasurer—John J. Voelkel, New Orleans.
Secretary—L. F. Desmond, Chicago.

Directors.

J. H. Allen, Lincoln, Neb.
Charles Warner, Wilmington, Del.
C. N. Ray, Detroit, Mich.
W. F. Jahncke, New Orleans, La.
C. M. Kelly, Providence, R. I.
W. W. Coney, Cincinnati, O.
L. W. Macatee, Houston, Texas.
D. J. Kennedy, Pittsburgh, Pa.

CONCRETE

CONCRETE ORGANIZATIONS.

American Cement Pipe Association—Secretary, E. S. Hanson, 538 South Dearborn St., Chicago.

American Concrete Institute—Edward E. Krauss, Secretary, Harrison Building, Philadelphia, Pa.

Association of American Portland Cement Manufacturers—Percy H. Wilson, Secretary, Land Title Building, Philadelphia, Pa.

Canadian Cement and Concrete Association—William Smith, Secretary, 57 East Adelaide St., Toronto, Ont.

Cement Products Exhibition Co., 208 South La Salle St., Chicago, Ill.; J. P. Beck, General Manager. Show, Chicago Coliseum, February 10-17, 1915.

Iowa Association of Cement Users—Secretary, H. H. Dean, Glenwood, Ia.

National Conference on Concrete Road Building—J. B. Beck, Secretary, 208 South La Salle St., Chicago.

Nebraska Cement Users' Association—Sec.-Treas., Frank Whipperman, Omaha, Neb.

Northwestern Cement Products Association—J. C. Van Doorn, Secretary, Security Bank Bldg., Minneapolis, Minn.

Concrete Triumphant Over the Fire Fiends.

The Thomas A. Edison Co.'s laboratories and factories, located at West Orange, N. J., were destroyed by fire on the night of December 9. The conflagration started about five o'clock in the afternoon in the film testing laboratory, one of the minor buildings of the group, which covers about 12 acres all told. It was a veritable storehouse of celluloid, which burned with intense heat and made a tremendous illumination that could be seen in a radius of more than 50 miles. Against such a fire from the nature of the combustibles the application of water was of no avail and the zone of heat in the early stages of the fire made it impossible for the firemen to get within striking range.

There were buildings of many types, some of brick, some of concrete and some steel frames covered with corrugated iron. The roofs, for the most part, were of steel frames, some of these being covered with corrugated iron, others with slate or with concrete slabs. The larger buildings were constructed of reinforced concrete, having concrete slab roofs. The floors of the reinforced concrete buildings consisted of slabs in which were imbedded wooden nailing strips to which maple floors were fastened. The window frames and sash throughout the plant were of wood in all cases.

A superficial inspection made immediately after the conflagration, while the wreckage was still smoking, showed that every piece of wood in the entire area had been burned, together with all of the contents of the buildings which consisted largely of highly combustible oils, wax, celluloid and chemicals equally as inflammable, used in the manufacture of cylindrical phonograph records, disc records, moving picture films and a long list of similar products for which this plant was the principal source of supply for the world.

The appearance of the destroyed buildings showed great masses of melted and twisted steel, fragments of steel sheets, broken and pulverized brick columns, and scorched and spalled concrete columns and arches.

About the only thing standing intact is the huge five-story concrete building, stripped of all its wooden parts, the concrete standing alone, gaunt, empty and smeared with smoke, but its integrity as a dependable, fireproof material demonstrated amidst those acres of wreckage lying all around.

Upon first inspection it appears that no a single floor slab had failed, in spite of the fact that the wooden top floors had burned away and the nailing strips imbedded in the concrete had entirely disappeared or remained as charred cinders sticking into the concrete shoe.

Of this entire building three of the columns on the third floor failed. These formed the support of four bays which lighted a large storeroom loaded with sheet wax, which was piled alternately with corrugated board, so that the burning wax sent out a horizontal sheet of flame playing constantly against the center of these three columns for several hours. The columns failed by reason of the unequal expansion of the reinforcing rods, which first spalled off the concrete on the inner exposure of the column and thus dragged it inward by the expansion of the outer rod. Probably if there had been no rods in those columns they would not have failed, for the amount of spalling which did occur would not have seriously affected the columns as to their structural value, and if there had been no rods present the amount of the spalling would probably have been much less. The failure of these columns resulted in the deflection of the beam above carrying two more stories and the roof by about three or four inches and with apparently no further damage.

All of the interior supports of the building were found to be intact. The first estimates of experts on the ground allowed no more than 10 per cent for the concrete part of this structure, and probably with more careful inspection this will be cut to five per cent total damage to the concrete in a huge factory building five stories high, which was literally gutted with fire so as to entirely destroy all of its contents, together with the wooden parts of the structure itself.

So is concrete demonstrated as the premier fireproof material.

Mr. Edison was not dismayed, and even while the fire was in progress set plans in motion for the reconstruction of his factory and began taking measures to take care of the hundreds of employees who were thrown out of work by the destruction of the plant.

The rebuilding will begin at once. H. T. Moyer, of the Moyer Construction Co., of Brooklyn, who has constructed much the greater part of the concrete work on the Edison property, was promptly on the ground the day after the fire to survey the situation.

There will be required in this reconstruction work about 30,000 barrels of Portland cement, 5,000,000 common brick, 100 barge loads of sand of 500 cubic yards each, about 200,000 cubic yards of crushed stone and a large quantity of hydrated lime. Many tons of reinforcement bars will also be required. These are only rough estimates made by engineers who visited the scene of the great conflagration before the actual extent of the damage to the buildings had been studied.

Stored in some of these buildings were great quantities of highly inflammable material. In some of the buildings there were vast quantities of moving picture reels, probably 200 tons of them. More than a hundred barrels of alcohol were stored in another building. Chemicals were also plentifully distributed about the plant. No human agency could have stayed the fury of the flames fed by such material.

W. S. Mallory, president of the Edison Portland Cement Co., New York City, in commenting on the fire, stated: "No building commodity save concrete

would have been able to withstand the fearful heat generated by the tons of wax, reels and chemicals stored in the buildings. Furthermore, the storage of great quantities of heavy castings on the floors above threw an abnormal weight upon the columns. Two separate engineers estimated that the total damage to the concrete buildings will not exceed 7½ to 10 per cent; in fact, one of them reported that the buildings still standing were 87½ per cent undamaged, and the other figured out a salvage of 90 per cent."

In a statement to a ROCK PRODUCTS AND BUILDING MATERIALS representative, Mr. Edison said: "It's just another experience; mine, as a rule, are not so expensive. The big lesson of this fire has been the value of concrete construction. The interiors were burned out, but there the buildings stand, ready for refitting."

"One error revealed was in not using steel window sashes and trim and wired glass that withstands great heat. We shall certainly have to use that finish henceforth."

In a later number record photographs and detailed inspection reports will be available, but these will all bear out the statements made above.

Bonding Asphalt to Concrete.

The necessity frequently arises in engineering works for joining concrete work with asphalt, especially in reservoir construction, but in this considerable difficulty has been experienced. Recently a new method has been tried in San Francisco, where the concrete secure this result the concrete surface was first painted with coal tar and it was found that when applied in this way under right conditions the asphalt would adhere so firmly that after it had cooled it could not be broken away without bringing pieces of concrete with it. In order to secure this result the concrete surface was first scrubbed clean with a bristle brush, and over this a thin coating of hot coal tar was "painted." The coal tar should be heated in small quantities, brought just to the boiling point, and then applied immediately. Heating the coal tar in large quantities, which necessitated some delay before it could be used, did not give such good results, and the men were therefore not allowed to heat more at a time than they could apply quickly as soon as it began to boil. The asphalt was spread over the tarred surface in the usual manner.—Exchange.

The Hydraulic Ramming Concrete Stone Machinery Co., of Paterson, N. J., has just issued a new catalogue showing its latest developments in concrete wall material, together with a number of illustrations of fine building jobs of various classifications which have been erected with the product of their machinery. W. H. Fisher, the head of this concern, has been in the concrete machinery business for more than a decade and has developed some very meritorious features and practical working elements in connection with his machinery outfit. There are a number of plants in various parts of the country operating with the hydraulic ramming machinery and every one of them has done well where there was any call for building material within the reach of the delivery of the plant.

The Sioux Falls Brick Co., Sioux Falls, S. D., is installing a large steam curing room for use in the making of cement blocks. This company, which is doing a large business, has enough orders in sight to take care of all this winter's output.

The Cement Stave Silo Co., Des Moines, Ia., has formed a company to be known as the Colorado Cement Stave Silo Co., at Longmont, Colo. Howard M. Jay is the manager of the company and Ed. Westerborg will have charge of the sales force. Both are well known in the vicinity of Longmont.

Protecting Drinking Water.

Concrete Well Platforms Are Conducive to Health.

Even with an abundance of fresh air and wholesome food, the health of a country family is largely dependent on the purity of its drinking water. Since the principal source of farm water supply is the bored or dug well, the purity of the water is determined almost entirely by the ability of the well curbing and cover to keep out contaminating surface water. If the well is curbed near the top with solid concrete (or with blocks or bricks laid in Portland-cement mortar) and is covered with a concrete platform the healthfulness of the water is practically assured.

How to Make the Reinforced Platform.

There are several methods of building a concrete well platform. The choice is dependent on the manner in which the pump barrel and stock are joined together. In the illustration is shown a platform 5 inches thick and 5 feet square, which contains a manhole fitted with a concrete lid. The pump stock passes through the platform by means of a circular hole at the side and a part of the manhole opening. By this means the pump stock and barrel can be joined together and slipped into position by a person working through the manhole. Afterwards the concrete manhole lid is set in place. Moreover this lid is heavy enough that it cannot be removed by a child.

In preparing the well for a concrete platform, see that 4 or 5 feet of the curbing near the top of the wall is of solid concrete (proportioned 1:2:4), or of blocks or bricks laid up with cement mortar mixed in the proportion of 1 part cement to 1½ parts sand. Carry the curbing 6 to 8 inches above natural ground level and grade the turf to this height so that surface water will flow away from the well. Prepare to mold the cover on a wooden platform of two-inch boards laid over the well or placed on a level spot of ground. For most wells a platform 5 feet square by 4 inches thick is sufficiently strong. To provide for a manhole opening, build a bottomless box, of 1 by 6-inch boards, 5 inches deep, 2 feet square at the top and 18 inches square at the bottom—outside measurements. Another plan is to have a tinsmith make a round bottomless tin form 5 inches deep, 2 feet in diameter at the top and 18 inches at the bottom, after the pattern of a large bottomless dishpan. To either manhole form attach a wooden block of the size and shape of the pump barrel or stock. Grease the manhole frame and set it on the wooden platform where the opening in the well cover is desired.

Proportion the concrete 1 bag of Portland cement to 2 cubic feet of sand and 4 cubic feet of crushed rock, or 1 bag of cement to 4 cubic feet of pit gravel. Have the concrete just wet enough to flush a little cement mortar when tamped into place. Over the entire wooden platform, except

within the manhole frame, spread 1 inch of concrete. For reinforcing, immediately place on this concrete 5-foot lengths of ¾-inch iron rods running in both directions (cross-cross) and spaced 9 inches apart. Bend the ends to a hook-shape. Strengthen the platform around the manhole opening by placing an additional rod on each side. Bring the cover to its full thickness at once by tamping in the remaining four inches of concrete. There will be needed 3 bags of cement, ½ cubic yard of sand, ¾ cubic yard of rock and 6 pieces of ¾-inch by 10-foot rods weighing 23 pounds.

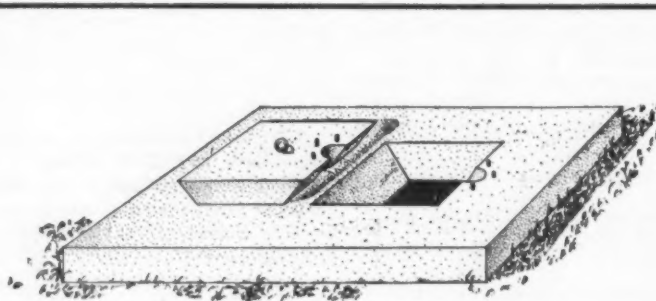
For fixing the base of an iron pump securely to the finished well platform, place in the soft concrete around the pump opening ordinary bolts (washed and heads down) to the depth of 4 inches. To locate these bolts correctly, set them by means of a wooden block or templet in which holes have been bored and spaced exactly like those in the pump base. Lag bolts or similar devices may also be used for this purpose. Finish the surface of the platform with a wooden float and steel trowel the same as for sidewalks. If the greased tin form is used, the manhole cover may be cast at the same time as the rest of the floor. Reinforce the lid with short lengths of iron rods laid criss-cross. As a lifting ring use half of an old bridle bit, or a hitching-post ring, the end of which is provided with a knob of twisted wire or with a nut and a large washer. If the wooden manhole form is used, carefully remove it after four hours. One day later build the manhole lid the same as for the tin form with this exception—place greased paper or cardboard around the edges of the opening to prevent the new concrete from sticking to that of the platform. To make the manhole lid lighter in weight, before placing the concrete spread 1½ inches of wet sand over the wooden platform inside the manhole opening and then tamp in the concrete. Take care to place the reinforcing within one inch of the bottom of the manhole lid.

After the well platform is two weeks old, carefully remove the wooden boards on which it was built and set or lower it into place. Give the platform a slope of ½ inch in the desired direction by placing a layer of cement-sand mortar between the well curbing and the platform.

Other Plans of Making the Platform.

Some persons prefer to make concrete well platforms in two pieces with the division line through the center of the pump opening. By this means the pump barrel and stock are easily joined and inspection is readily provided for. In other cases where the pump and stock can be joined together and lowered into the well as one piece, the concrete platform (removable) is made as a unit and with a single opening merely large enough to receive the pump stock.

Concrete well platforms built according to these methods can be depended on to protect the well from mice, vermine and scrubwater. In pure water there is health.



CONCRETE WELL PLATFORM WITH MANHOLE COVER REMOVED.

PROCEEDINGS OF FARM IMPROVEMENT CONFERENCE.

The Universal Portland Cement Co. has issued in book form the "Proceedings of the Conference of Farmers' Institute and Short Course Workers on Permanent and Sanitary Farm Improvements," held under the auspices of the Information Bureau at the Hotel Sherman, Chicago, Ill., August 18-23, 1913. The many ways in which concrete has been and can be useful on the farm are illustrated and described in a forceful manner, bringing the technique of concrete construction out in such a way that it can be understood and worked out by anyone whose interest lies in the betterment of farm conditions. Many construction subjects in the book are discussed by experts in an understandable manner, rendering the application of the points suggested merely a matter of following instructions.

CONCRETE PIPE MEETING DURING CEMENT SHOW.

As announced in our December 7 issue, the convention of the American Concrete Pipe Association will be held in Chicago during the Cement Show in February. The exact dates of the meeting will be Feb. 15-16, enabling all those who come to the convention to attend the Cement Show as well. Several addresses of unusual interest are being prepared for the program, detailed announcement of which will be made in due time.

NATIONAL PLANT SWEEP BY FLAMES.

The National Concrete Stone Co. plant, Twelfth avenue and the Detroit Terminal railroad, Greenfield township, Detroit, Mich., was damaged by fire early in December. The loss is estimated by the president, T. E. Reynolds, at between \$12,000 and \$15,000, with only a slight amount of insurance.

The plant, situated a short distance west of Highland Park, was of frame construction and was built last March. A general concrete manufacturing business was carried on, giving employment to about 20 men.

NEW INCORPORATIONS.

Pennsboro Concrete Works, Pennsboro, W. Va.; capital, \$25,000; V. Wirt Kittle and others.

Tecumseh Cement Silo Co., Tecumseh, Okla.; capital, \$8,000; W. C. Fumy and others.

John Lippincott, Barry, Ill., has purchased a concrete block business formerly operated by William Forshey. He expects to put in improvements and to operate the plant next spring.

Frank L. Wolck, J. W. Wingate, and W. B. Rice, of Crystal Lake, Ill., have organized the Crystal Lake Concrete and Gravel Co., to equip a plant to manufacture concrete blocks and other cement products. They have a capital stock of \$5,000, all paid in.

The Citizens' Association of Manitowoc, Wis., is making strong efforts to secure the location of the Atlas Engineering Co., of Milwaukee, an enterprising concern which manufactures a line of concrete mixers. It is understood that the Atlas concern has been thinking of seeking another location, and asked if a site could be secured at Manitowoc and \$20,000 in preferred 7 per cent stock be sold in that city.

Petrone Mfg. Co., D. G. Zeigler, general manager, Lula, Ga., is completing arrangements to erect a \$300,000 factory at Gainesville, Ga.; also contemplates erection of other plants; manufactures composition fire brick, etc.

CEMENT

The Annual Meeting in New York

The twelfth annual meeting of the Association of American Portland Cement Manufacturers was held at the Hotel Biltmore, New York City, December 7, 8, 9 and 10, 1914. Monday and Tuesday were devoted to committee meetings. The executive committee of the association held its meeting in the afternoon and evening of December 8, at which detailed reports were made by the various committees exhibiting their activities during the year. On Wednesday the entire session was devoted to the business of the association.

The following officers were elected for the ensuing year:

John B. Lober (Vulcanite), president.

Robert S. Sinclair (Alsen's), vice president.

Charles F. Conn (Giant), treasurer.

Executive committee, John R. Morron (Atlas); E. M. Young (Lehigh); G. S. Brown (Alpha); W. S. Mallory (Edison); John A. Miller (Dexter); F. W. Kelley (Helderberg); D. McCool (Newaygo); E. M. Hagar (Universal); R. H. Hughes (Crescent); R. W. Kelley (Virginia); Richard Hardy (Dixie); A. H. Craney, Jr. (Union Sand & Material); L. T. Sunderland (Ash Grove); F. R. Bissell (Texas); F. P. Jones (Canada).

The following association officers were also elected:

Percy H. Wilson, secretary.

Lewis R. Ferguson, assistant secretary.

W. D. Lober, assistant treasurer.

The membership of the association, totaling 67 members, was increased by the election of three new mills, as follows: Sandusky Portland Cement Co., Sandusky, Ohio; Ironton Portland Cement Co., Ironton, Ohio, and the St. Mary's Portland Cement Co., Ltd., St. Marys, Ont., Canada.

The meeting was the largest in the history of the association, more mills being represented than upon any previous occasion. At the dinner, held on the evening of December 9, there were 165 present.

The usual order of speeches was dispensed with in order to show the moving picture films which have been produced recently by the publicity committee. The scenario deals with the young lover motif in the shape of an agricultural college concrete engineer. He is employed by the owner of a good but dilapidated farm to put in the most substantial and permanent improvements. He first surveys and inspects the whole place carefully and calculates all of its possibilities, and then sets about the development with concrete structures of every useful kind in such a case, including a modern farm house, barns, silos, corn cribs, feeding floors, walks, drives, roads, fence posts, watering troughs, tanks, retaining walls, etc., not forgetting to clinch the suggestion of fire-proofness. Mary, the owner's daughter, is woven cunningly into the story, and presently the young lover who has made the desert blossom like the rose takes Mary and the place together to crown the well balanced picture with human happiness. The "movie show" created great enthusiasm, and unstinted praise was heaped upon the instigators and perpetrators of the picture story. A committee was put to work to find the best title for the story, and several suggestions were made offhand. Harold Scott, Albert Moyer and Percy Wilson are giving serious study to get the "fetching" name that will read good on the bill-

boards, for the piece with just the right name will doubtless prove a drawing card at many a movie show in all parts of the country, and very likely pay its own freight.

On Thursday three papers were presented to the association, which, after the authors' final corrections, may be published later. By title, they were:

"Transactions of the German Portland Cement Manufacturers' Association," by R. W. Lesley and E. L. Conwell; "Organization and Work of the New York State Highway Department," by George A. Ricker, first deputy commissioner, New York state highway commission; "Testing and Handling of Aggregates for Concrete," by S. H. Mattimore, assistant engineer New York state highway commission.

The work of the association along all the present lines of endeavor for increasing the consumption of Portland cement will be continued as heretofore.

It was decided that the next meeting of the association would be held at the Hotel Blackstone, Chicago, Ill., May 10, 11, 12 and 13, 1915.

About 5,500,000 barrels of cement were used during 1914 in the construction of concrete roads, as against 2,800,000 barrels in 1913. This amount was used principally in the states of New York, Connecticut, Maryland, Ohio, Michigan, Illinois, Wisconsin, Iowa and California. The wonderful increase in the use of cement for road construction can well be appreciated when compared with the amount used for this purpose in the year 1909, which was only 104,000 barrels.

The Companies Represented.

Allentown Portland Cement Co., J. W. Fuller, R. L. Cope and R. S. Weaver.

Alpha Portland Cement Co., G. S. Brown, Harry Drew, F. M. Coogan, J. J. Matthes, Edw. Hennessy, Mr. Wight and Lovell Carr.

Alsen's Amer. Portland Cement Works, R. S. Sinclair and W. P. Corbett.

Ash Grove Lime & Portland Cement Co., L. T. Sunderland.

Atlas Portland Cement Co., E. D. Boyer, J. L. Medlar, W. A. Holman, J. R. Morron, W. T. Chollar, H. S. Dudley and D. L. McFarland.

Castalia Portland Cement Co., Geo. W. Hackett.

Chicago Portland Cement Co., Norman D. Fraser, A. J. Gates, R. Ross Frazer and J. U. C. McDaniel.

Clinchfield Portland Cement Corp., W. E. Law.

Coplay Cement Mfg. Co., Walter G. Dutton.

Crescent Portland Cement Co., David M. Kirk and R. H. Hughes.

Cape Girardeau Portland Cement Co., W. H. Harrison.

Dewey Portland Cement Co., F. L. Williamson.

Dexter Portland Cement Co., Jos. Brobston and Jno. A. Miller.

Diamond Portland Cement Co., Lyman A. Reed.

Dixie Portland Cement Co., Richard Hardy, J. H. Dalbey and W. H. Klein.

Edison Portland Cement Co., W. S. Mallory, H. E. Kieffer, G. S. Bartlett, Morris Hunter and C. M. Foster.

Glens Falls Portland Cement Co., G. F. Bayle and F. W. Douglas.

Giant Portland Cement Co., R. E. Griffith, Chas. F. Conn and O. D. Howard.

Helderberg Cement Co., F. W. Kelley and W. J. Fullerton.

Huron Portland Cement Co., J. W. Boardman.

Iola Portland Cement Co., H. Struckmann.

Ironton Portland Cement Co., A. C. Steece.

Kosmos Portland Cement Co., Chas. Horner and Samuel Horner, Jr.

Lawrence Portland Cement Co., L. V. Clark, E. R. Ackerman, O. G. Johnson and M. S. Ackerman.

Lehigh Portland Cement Co., Ernest Ashton, A.

Y. Gowen, B. L. Swett, E. M. Young, H. M. Scott and F. E. Paulson.

Louisville Cement Co., W. S. Speed.

Michigan Portland Cement Co., N. S. Potter, Jr.

Thos. Millen Co., Robt. Love.

Nazareth Cement Co., Jos. A. Horner.

Newaygo Portland Cement Co., D. McCool and J. B. John.

Oklahoma Portland Cement Co., Adam L. Beck.

Peerless Portland Cement Co., J. H. Lancaster and W. M. Hatch.

Peninsular Portland Cement Co., John W. Shove.

Penn-Allen Cement Co., W. E. Erdell.

Pennsylvania Cement Co., W. N. Beach and J. W. Alker.

Phoenix Portland Cement Co., J. L. Gilkyson.

Sandusky Portland Cement Co., S. B. Newberry.

W. B. Newberry, A. C. Newberry, F. C. Printy and F. L. Jorgensen.

Security Cement & Lime Co., J. K. Barbour, R. L. Hamaker, L. A. Coover and Jno. J. Porter.

Standard Portland Cement Co., Frank Ford.

Superior Portland Cement Co., Guy W. Mallon.

Texas Portland Cement Co., E. J. Moors and F. R. Bissell.

Union Sand & Material Co., A. H. Craney, Jr., H. P. Johnson and H. L. Block.

Universal Portland Cement Co., B. F. Affleck, J. P. Beck, C. W. Lyons, B. H. Rader, E. M. Hagar, G. Wilson, W. M. Kinney, M. Metcalf, Leonard Wasson and T. F. Smith.

Portland Cement Co. of Utah, L. M. Bailey.

Virginia Portland Cement Co., R. W. Kelley, H. M. Fetter and R. J. Hawn.

Vulcanite Portland Cement Co., J. B. Lober, W. D. Lober, Albert Moyer, W. R. Dunn and S. Warren Hartwell.

Whitehall Cement Mfr. Co., W. H. Harding.

Wyandotte Portland Cement Co., J. W. Boardman.

Canada Cement Co., Ltd., F. P. Jones, A. C. Tagge and H. L. Doble.

Guests and Camp Followers

Horace G. Kimble, of the Kent Mill Co., mingled with the throng in the lobby, grill and buffet, and helped to make the visitors enjoy the few leisure moments.

Eldred, of the Bradley Pulverizer Co., big of heart as well as size, was on hand with a string of new droll stories that went back to the mills from the big annual meeting.

Richard L. Humphrey, president of the American Concrete Institute, says that the program of the coming convention in Chicago will have some very interesting features, amongst which he mentioned a series of tests upon reinforced concrete columns made under field conditions in New York and tested at the Pittsburgh laboratories of the Bureau of Standards, that showed dependable loading of almost 3,000 pounds to the square inch of section. Other matters of equal importance are also included in the program.

The Henry S. Spackman Engineering Co. was represented by E. L. Cornwell and Robt. W. Leslie, who presented the paper on the transactions of the German association; also by Anderson Polk, who has opened a branch laboratory in New York in the Grand Central terminal.

The Fuller Engineering Co. was represented by H. G. Barnhurst and H. R. Collins.

The Lehigh Car, Wheel & Axle Works was represented by Thos. Fuller, Louis Salade, James Gish, Jr., C. R. Bianhard, J. B. Murray, H. C. Shields and A. P. Hachtmann.

Richard K. Meade, mechanical and chemical engineer of Baltimore, was on hand to discuss the practical technique of cement.

R. J. Wig, of the United States Bureau of Standards, who has made so many interesting investigations of cement and concrete, was present at all the sessions.

The Manufacture of Marl Portland Cement

BY D. E. CURTISS.

[The processes of the manufacture of Portland cement are quite familiar to many of the readers of our paper, but others have never had the opportunity of visiting the mills and studying the various raw materials and their condition in nature and the methods by which they are assembled, refined and eventually turned into Portland cement. The following article by Mr. Curtis very lucidly handles the subject of Portland cement manufacture as especially applied to that type of clinker which is derived from marl, instead of using lime rock, in order to secure the indispensable calcium content of the material.—*EDITOR.*]

Among the various materials used for structural purposes, cements and cement products occupy an important place. The specific function of cement is to furnish a binding or bonding agency for structural materials of larger bulk. The ability of cement to set and harden while in contact with water is what gives rise to the name "hydraulic cement."

Portland Cement.

The essential constituents of Portland cement are silica, alumina and lime. Other substances are usually present and exert an influence on the quality or use of the cement. The limits to which these substances may be present have been set by American practice as follows:

	Per cent.
Silica	19 to 26
Alumina	4 to 11
Iron oxide.....	0 to 4
Lime	58 to 67
Magnesia	0 to 4
Sulphuric acid.....	0 to 1.75
Alkalies	0 to 3

[Note.—Bulletin No. 3, Fourth Series, Ohio Geological Survey. In the specifications adopted by the Society for Testing Materials the term Portland cement "is applied to the finely pulverized product resulting from the calcination (heating) to incipient fusion of an intimate mixture of properly proportioned argillaceous (clay like) and calcareous (lime like) materials, and to which no addition greater than 3 per cent has been made subsequent to calcination." These specifications also provide that the cement shall not contain more than 1.75 per cent of sulphuric acid nor more than 4 per cent of magnesia.]

Portland cement in the United States is made from six classes of raw materials:

1. Cement rock and limestone.
2. Limestone and clay.
3. Marl and clay.
4. Chalk and clay.
5. Slag and limestone.
6. Alkali waste and clay.

The following table will show the approximate composition of the various raw materials for marl Portland cement manufacture:

Mixture	Silica	Alum.	Iron	Lime	Magn.	Carb.
	p. ct.	p. ct.	p. ct.	p. ct.	p. ct.	p. ct.
Marl	0.20	0.21	0.01	50.90	0.19	40.26
Clay	42.85	13.51	4.49	12.69	3.30	13.59

At this point it may be well to state that the prominent ingredients of rocks are: Aluminum, which, when combined with oxygen, forms alumina, the basis of clay; magnesium, calcium, potassium, sodium, iron and carbon. These nine substances form, according to Dana, 977/1000 by weight of the entire crust of the earth.

According to their origin, rocks may be divided into three distinct classes:

1. Igneous rocks, or those ejected in a heated condition from the interior of the earth and afterwards cooled.
2. Aqueous rocks, or those deposited as sediment by water.
3. Metamorphic rocks, or those originally deposited in layers, but afterwards so changed by the action of heat as to lose all traces of stratification. This change, which is called metamorphism, is caused by heat acting under pressure in the presence

of moisture. Under these conditions a far less heat is required to remove all traces of stratification. Metamorphism appears to consist mainly in a rearrangement of the chemical constituents of the rocks.

Marl is of fresh water origin and is an amorphous or shapeless calcium carbonate of the metamorphic class. In simple it is a rock containing a high percentage of calcium carbonate and existing in a soft or putty-like state.

Clay.

Clay is formed by the decomposition of various kinds of rocks, chiefly through mechanical and chemical means. Expansion and contraction, owing to temperature changes, tend to break up rocks and develop fissures where water collects, and in freezing exerts a direct expansive force. The erosive action of flowing streams and the waves beating against headlands, the grinding action of moving glaciers, and the moving influence of strong winds are all mechanical agents which assist in breaking up the earth's rock crust. Far more powerful however, are the chemical influences. The solubility of the rock constituents in water, the oxidizing effect of water containing dissolved oxygen which produces new compounds of larger bulk, the solvent action of acids, especially of carbonic acid, all assist in breaking up rock masses into minute fragments. Practically without exception the manufacturers of marl cement use a clay high in alumina and carbonate of lime.

The color of clay is dependent upon its chemical composition. A pure kaolin clay is white. The red color is due to iron oxide; yellow to hydrated oxide of iron; blue to ferrous iron; green to silicate of iron; gray or black clay is due to the organic matter contained.

The essential constituents of clay are silica and alumina. The detrimental of clay are iron oxide, lime, magnesia, and alkalies. Iron is present in all clay masses. Besides the color it imparts, it is an active flux.

Calcium is present in clay as a carbonate, silicate or sulphate. If present as a carbonate (or lime) it loses its carbon dioxide at 900 C and becomes an active flux.

Magnesium may be present as a silicate in mica where it exerts but little influence on the clay mass; or as dolomitic limestone, in which case its general effect is similar to that of lime.

The alkalies are generally present in the form of feldspar. Their effect is that of active fluxing agents.

The presence of organic matter in clay increases its plasticity, greatly increases its tensile strength that less water is required for a given fluidity.

Manufacture.

The gathering of the raw materials to one common point, for the manufacture of a marl Portland cement is one of economic consideration. For the economical manufacture of cement the base of supplies, namely, marl and clay, must be close at hand. Long hauls and unnecessary handling tend to increase the cost of production. The rotary kilns are usually much longer in a marl mill, or those mills using a wet slurry process, measuring from 125 to 150 feet in length, than in those mills using the dry process of manufacture. The inference is that were a marl mill to use a 75 or 90-foot rotary instead of a 150-foot one, the consumption of coal used in drying and heating the mixture would require almost as much coal for the 90-foot rotary as for the 150-foot one.

The marl is usually collected by means of boats. There is a system of scows, each one having a capacity of 100 cubic yards, which are propelled by means of small power boats or tugs. At different vantage points about the lake are located floating dredges.

As rapidly as the tug returns the scow to be refilled by the dredge, it returns a loaded scow to the landing. In this manner there is no lost motion. The tugs are busy returning empty scows to the dredge and bringing in full ones, while the dredge is occupied continuously in refilling the empty ones. At the landing the marl is pumped from the scows into receiving bins.

The clay is usually located in as close proximity to the mill as is possible. Where the location of the clay bank is practically abutting the mill, the screw process is used in moving the clay from the bank to the mill. Where the location is from one-quarter mile to one mile away from the mill, other means have to be used. The method I have in mind, which one manufacturer uses with great success, is a narrow gauge railway. The bank, a hill of exceedingly fine blue clay, lies about three-quarters of a mile from the mill. The system consists of small dump cars, from six to eight cars to a train and propelled by a small gasoline engine. As a usual procedure there is a train in transit at all times.

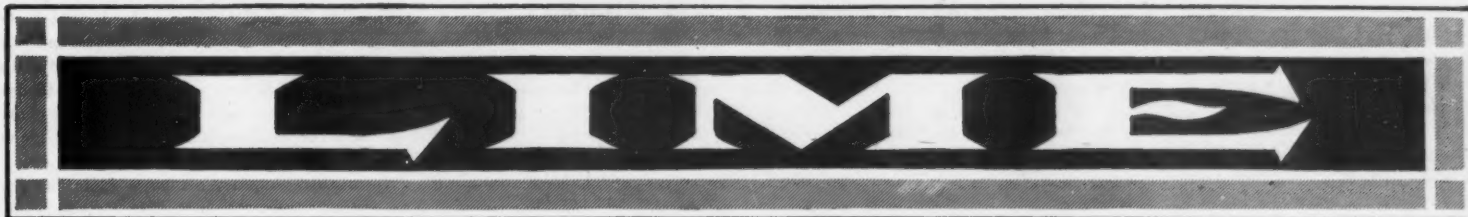
At the mill the marl and the clay go through a process of chemical analysis to determine their constituent parts. After this analysis is determined they are mixed in their proper proportions and are then fed into the rotary kilns. As this mixture is fed into the rotaries the uncombined water is first driven off and the mixture becomes dry. At about 800° to 900°C carbon dioxide and chemically combined water are driven off. At about 1000°C lime combines with free silica, forming a porous mass. As the temperature increases, the fluxes enter into combination, forming a solidified mass. This stage between 1000°C and 1100°C represents the formation of the lower silicates. With increase of temperature up to 1450°C the fusion process goes on, more and more lime going into solution until finally in cooling a basic silicate crystallizes out. This latter is the cement clinker, an unstable compound which is both hydrolized and hydrated by water, forming stable and permanent compounds of great strength and hardness.

The clinker is now subjected to inspection for evidences of over or under-burning. From the cooling pit the clinker is now fed into fine grinding mills of the centrifugal type and ground to a flour-like fineness, so that at least 75 per cent of it will pass a sieve having about 40,000 meshes to the square inch. From the grinding mills it is conveyed to storage bins. While the bins are filling, a small sample is taken of the finely pulverized cement, at the rate of about one sample for every two barrels of the ground cement going into the bins, for purposes of physical testing as to fineness, setting time, tensile strength, constancy of volume and loss on ignition.

Cement is very rarely sacked and piled up on the floor. The logical procedure is to await the orders for shipment, fill the sacks and deposit them at once into the freight car, thereby rendering a saving of much handling. Practically all cement shipped at the present time is packed in sealed paper bags, or in cloth bags which are tied first and filled afterwards through a small valve in the bottom of the bag.

The color of cement is chiefly derived from its impurities, such as oxides of iron and magnesia, rather than from its essential ingredients.

The J. B. Speed Co., Louisville, Ky., recently furnished about 3,000 barrels of cement to the National Concrete Construction Co. for use in a new six-story concrete building in course of construction for the Fireproof Storage Company, of Louisville. Most of the large buildings going up at this time are of concrete construction, but they are far from numerous. The company's mills are operating to capacity at present and will run up to about Christmas, when they will be closed down for a short period. Sales of lime have been very good, as the paper and pulp industries and other commercial organizations are using a great deal.



The Source of Lime.

BY ERNEST F. BURCHARD.

[For the sake of clearness all chemical terms have been eliminated in the following article which has been greatly condensed to meet the lack-of-space requirements of our columns.]

Limestone belongs to the class known as sedimentary rock as distinguished from igneous and metamorphic rocks. The lime manufacturer does not have to deal with igneous rocks at all; therefore they will not be considered here. True marble belongs to the class known as metamorphic rock. Sedimentary rocks are generally composed of the fragments or materials of older rocks of any class that have undergone disintegration on the surface of the land.

Metamorphic rocks are those sedimentary or igneous rocks which have, in the course of time, become greatly changed in composition and texture. The chief agents that bring about these changes are pressure, heat and chemical reactions, generally at considerable depth below the surface of the earth. By metamorphic agencies limestone is transformed into marble.

Origin.

Sedimentary rocks have been deposited under water in seas and lakes, also on land surfaces, and in cavities and crevices in other rocks. The chief agent in the transportation of rock debris is water in motion, including rain water, streams, and the waves of the seas and lakes. Ice in motion in the form of glaciers and icebergs transports an important quantity of material, and the wind carries small quantities of very fine, light material.

The deposits of calcium carbonate have been very much greater than those of gypsum. The principal deposits of calcium carbonate which have ultimately formed limestone have been made through the agency of plants and animals in the form of shells, coral, bone and teeth. Some of these deposits show more or less distinctly the fossil remains of the organisms which played so important a part in their foundation, but others show no trace of their organic origin on account of the fineness to which the fragments were broken by the waves prior to their consolidation into rock masses. Sedimentary rocks are usually made up of layers or beds, which can be easily separated. These layers are called strata, and rock deposits in such layers are said to be stratified.

Character.

Limestone includes many and widely varying types of rock, differing in origin, color texture, hardness, structure and composition. The one property they have in common is that of consisting largely of the mineral calcite or of the mineral dolomite, a combination of calcium and magnesium carbonates. No natural limestones are chemically pure, however, and few are nearly so. All contain more or less foreign material, either chemically combined or as admixed minerals. The more common of these foreign substances are magnesium carbonate, ferrous carbonate, ferrous oxide, ferric oxide, silica, alumina, clay, carbonaceous matter, mica, talc and minerals of the pyroxene group.

The colors and stains commonly noted in limestones are due to the presence of foreign minerals.

The light-blue, buff, yellow, pink, red and brown shades are largely due to iron compounds, and the grays and blacks are often due to the presence of carbonaceous matter derived from organic remains. Manganese oxides also act as coloring agents.

Varieties.

Based on chemical composition, the following varieties may be distinguished:

- (1) High-calcium limestone.
- (2) Magnesian limestone.
- (3) Dolomite.
- (4) Argillaceous limestone.
- (5) Arenaceous and siliceous limestone.

It should be emphasized that many of these varieties grade into one another, and that many limestones combine the characteristics of two or more varieties.

Impurities in Limestone.

Among the common impurities in limestone are clay material, silica, alumina, iron oxide or iron rust, iron carbonate, iron pyrites and marcasite or iron disulphide, gypsum, alkalies and carbonaceous material. Clay is introduced into the beds while they are being deposited on the sea bottom, and is most often found along the bedding planes, but it is also disseminated through the rock. Clay also results from the decomposition of impure limestone in the process of weathering at the surface, in joint cracks that have been enlarged by solution, and in solution channels and caves. Much surface clay is carried down into cracks, crevices and irregularities in the rock surface, and when quarries are operated on a large scale, it is difficult to separate

(Continued on page 46.)

William B. Irvine.

William B. Irvine, president of the Knickerbocker Lime Co., Philadelphia, Pa., died Dec. 6 at his residence, Fifty-ninth street and City Line. He was 70 years old. He was born in Philadelphia, February 18, 1844, and was educated in the public schools and graduated in 1858. In 1862 and for several years following he was engaged in the stone business, and later in lime manufacturing in Chester county, and with an associate opened a depot for the sale of lime in Philadelphia, under the name of the Knickerbocker Lime Co., meeting with success. Mr. Irvine was unmarried and lived with his sister, Miss Mary B. Irvine. He served as city treasurer, and was a member of the Union League.

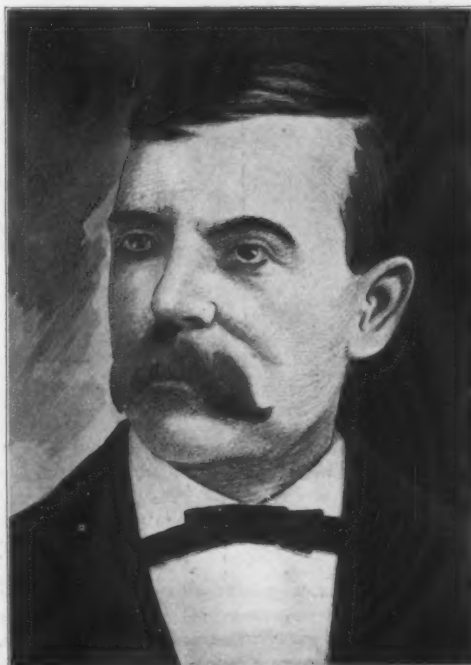
Mr. Irvine's death was the result of several months' illness. In July he underwent an operation and his condition became worse, and recently a second operation was performed. He was for 21 years a director of the Real Estate Title & Trust Co., and for nine years a member of the school board of the fifteenth ward, four of which he was president.

At a meeting of the board of directors of the Knickerbocker Lime Co., Inc., Philadelphia, Pa., held on December 14, John P. Coughlin was elected president to fill the vacancy caused by the death of Wm. B. Irvine. Mr. Coughlin formerly occupied the office of vice-president of the company, having risen to this position from that of traveling representative, in which capacity he first became affiliated with the company just prior to its being incorporated. The selection of Mr. Coughlin to fill such a responsible office and one which had been so successfully conducted by Mr. Irvine for so many years is taken by all as a most fitting one. He has been connected with the company consecutively for 16 years and is thoroughly conversant with every angle of the lime business, together with the general building material business.

Lime Bureau Meets.

The Lime Service Bureau, Washington, D. C., held a meeting in that city on Dec. 10, at which a substantial number of the bureau's subscribers and other lime manufacturers were present. Many issues of interest to the lime industry were discussed. After the opening formalities a statement was submitted by the bureau showing the results of its campaign to date for the increase of agricultural lime consumption through the operation of a department of soil investigation and research which it has successfully conducted for the period of a year. This report showed that the total circulation of soil improvement newspapers which have requested the bureau's articles on that subject is more than half a million in the states of Pennsylvania, New Jersey, Delaware, Maryland, West Virginia, Virginia and North Carolina. A new plan for conducting this feature of the general service of the bureau is being formulated and will be presented by the first of the coming year.

Much interest was shown in the discussion of the campaign being conducted for a greater demand for hydrated lime in the paper package with the eventual elimination of the returnable cloth packages. One idea which seemed to meet the approval of the subscribers was the practice of each company adopting the sales policy of quoting hydrated lime and ground limestone to the trade only in the paper package, unless a quotation in cloth is specifically



THE LATE WM. B. IRVINE.

demand, with the result that the following resolution was presented and unanimously agreed to:

"Resolved, That the Lime Service Bureau be requested to endeavor to have its subscribers and other interested manufacturers in their original quotations on hydrate, ground lime and ground limestone to only quote their trade in non-returnable bags; it being understood, however, if a specific request be made to quote in returnable bags, the manufacturer shall have the privilege to do so. The intention of this motion is to eliminate shipments of hydrate, ground lime or ground limestone in cloth and to try to induce the use of paper bags exclusively, with the final intention of eliminating the returnable bag by July 1, 1915."

Other matters taken up for discussion included the organization by the bureau of a credit bureau for lime manufacturers and the operation of a central freight rate bureau, both subjects receiving earnest deliberation. The bureau is already engaged in compiling freight rates on lime from the plants of its subscribers, in whose cases the plant price has been published, and the matter of a credit bureau is also being investigated with a view of deciding upon some practical plan for its operation.

The bureau received a very fine indorsement of its service to date in the form of a resolution adopted unanimously to the effect that the subscribers will continue their moral and financial support of it, and a vote of confidence and thanks was tendered the bureau for its efforts in behalf of better general conditions in the lime industry.

To the Schmidt Co., of York, Pa., a contract has been awarded for the erection of a lime plant at Bittingsers, Pa., for Stacy & Wilton Co.

Kilns of the Rockland & Rockport Lime Co., Rockport, Me., were damaged by fire to the extent of \$4,000, fully covered by insurance, recently.

Pownal Lime Co., Pownal, Vt., has been incorporated with a capital of \$5,000; incorporators, Lansing Hayes, Brooklyn, N. Y.; N. L. Stafford and E. D. Lawrence, of Rutland.

The Georgia-Carolina Lime Co., of Charleston, S. C., will erect a lime kiln at Gainesville, Ga., with a daily capacity of 400 tons of ground limestone, which will cost \$30,000.

Buguo Lime Co., Hot Springs, N. C., has been incorporated by G. C. Buguo, of Fletcher; S. P. Burton and S. D. Holt, of Asheville; capital, \$15,000.

Unique Features of Cedar Hollow Lime Plant.

Within the past year the Cedar Hollow plant of the Charles Warner Co., located in Chester county, Pa., has been increased in efficiency by the installation of a number of new and unusual features for the better and rapid handling of its product. One installation in particular is that of the Manierre box car loader, which is the only thing of its kind in the country.

Lime comes from the kilns or ovens in a highly heated condition and must be allowed to cool. It must be handled with the idea of keeping the breakage as low as possible since only the lump material has the high class sales value; also, it must be screened to be freed from the fines and must have the rejections thrown out and then loaded in box cars.

At Cedar Hollow there are two batteries of kilns known as the "new" and "old" kilns, which are at opposite ends of the plant. The lime-handling installation is conveniently located between them with a trestle approach from either direction. At the new kilns the lime lumps direct from the coolers into cable cars of 100 cubic feet capacity furnished by the Atlas Car & Manufacturing Co. A 24-inch narrow-gauge system is used and the tracks go in under the coolers so that there is very little manual effort upon the part of the laborer. A small electric locomotive, also made by the Atlas company, shifts these cars around and conveys them to the foot of the incline, where a hoist cable is connected which pulls them up the incline to dump in the bin. Through careful attention to the details of installation so as to eliminate unnecessary labor, one man is enabled to draw the lime from the equivalent of 11 kilns and pull it to the foot of the incline.

At the old kilns the proposition was somewhat more difficult, as it was impossible to run the tracks in under the kilns. Accordingly a portable steel pan conveyor, mounted on wheels, was obtained from the Jeffrey Manufacturing Co. on special order, and this is trundled around from one kiln to the other as each is drawn successively. This conveyor carries the lime out from the cooler to dump into a car on the outside of the shedding.

Great care is taken so that when the cars are dumped into the bin, the lime drops on the lime already in the bin and the car is then pulled clear. In this way the lime runs down on itself and little or no breakage occurs. This bin is so constructed as to enable the lime to cool with the greatest rapidity and also has sufficient capacity so that it is necessary to have a loading gang at work only in the daytime.

When it is desired to take lime out of the bins for loading, the machinery is set in operation and the material feeds out automatically from any one of the bin bottom doors that is opened. There is one man at this point who sees to it that the lime does not jam. The operation is so nearly automatic that he can spend most of his time cleaning up and preparing cars for shipment.

The pan conveyor under the bins is 42 inches wide and was furnished by the Link-Belt Co., of Philadelphia. This pan conveyor takes the material from the bins and elevates it to a shaking screen in the second floor of the building. This screen is a pulsating screen manufactured by Symons Brothers Co., of Chicago. Its screening surface measures 4 feet wide and 8 feet long, and the size openings used in the plate are $2\frac{1}{2}$ inches. This screen discharges on a 36-inch belt conveyor, on either side of which is an inspector for picking out any core (under-burnt lime) or over-burnt lime. When it is desired to crush the run-of-kiln lime for the hydrating plant the screen plate is removed and the pan conveyor discharges into a McLanahan single-roll crusher.

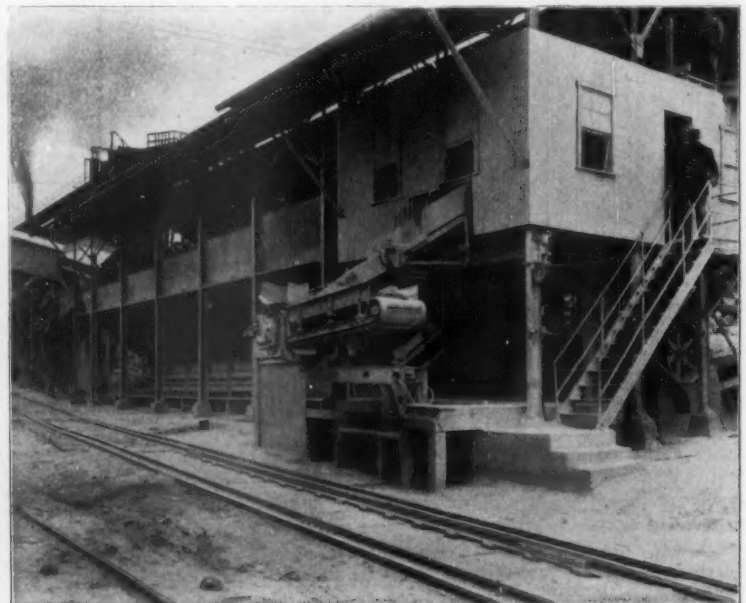
The inspection belt conveyor discharges to a chute which conveys the material down to the Manierre loader in its position in the box car. The car is already resting on track scales and has been light-weighted. The scales are set to the exact weight desired and an electric bell informs the operating men when the operation is complete. The men finish their daily loading of 13 cars in about eight hours and then take care of the machinery and clean up after the day's run. Though the Manierre loader is operated at a capacity of only about 30 tons per hour, when actually running it would appear to have a capacity much beyond this.

The views show clearly the general layout of the plant and the operation of the Manierre loader. The design of the lime cooling bins presented special features of engineering. The Vanderstucken-Ewing Construction Co., of Bethlehem, worked out these engineering details under the supervision of the engineering force of the Charles Warner Co. and erected the bins.

Having been developed for the coke business where breakage was an important consideration, the Manierre loader was especially suited to the lime business. The feature of tilting the conveyor arm enables the operator to start with the discharge close to the floor of the car and lift up gradually as the pile increases, thereby reducing breakage to a minimum. Also the variation of speed of which the motor is capable enables the operator to place the lime exactly where he wants it.



Manierre Loader in Position to Place Lime in End of Box Car; Lime Comes Down the Chute Through the Car Door; Track Scales in Foreground, Upon Which Car Rests While Being Loaded; Lime Car on Trestle Returning Empty to Old Kilns; Plant Manager, Irving Warner.



General View of Lime-Handling Installation, Showing Construction of Bins, with Doors at the Bottom for Drawing Out Cool Lime on Pan Conveyor; Discharge End View of Manierre Loader in Usual Operating Position; New Kilns at Left Background.

SAND and GRAVEL

Producing For the Philadelphia Market

All of the sand and gravel reaching the Philadelphia market is dredged from the Delaware river, which flows past the city. During the producing season there are from 5,000 to 7,000 tons of stone and sand taken from the river in a single day.

In the Philadelphia market the term "sand and gravel" is used somewhat differently than in other portions of the country. What is usually termed gravel is known as "stone" or "pebbles" in Philadelphia. Sand is the same in Philadelphia as elsewhere, with the exception that all river sand is washed and screened. The term "gravel" as used by Quaker City producers refers to coarse sand containing small pebbles.

River stone, or pebbles, was little used in Philadelphia previous to the building of the League Island navy yard dry-dock in 1904. Previous to this time nothing but crushed limestone had been used. The navy yard job was awarded to contractors who had been accustomed to the use of pebbles in the South and West. The specifications, which were drawn by the government engineers, were for pebbles, ranging in size from three-fourths inch to three and one-half inches. Because of the inability of the market to furnish pebbles within this size, the stone men had the specifications changed so as to permit the use of four-inch pebbles.

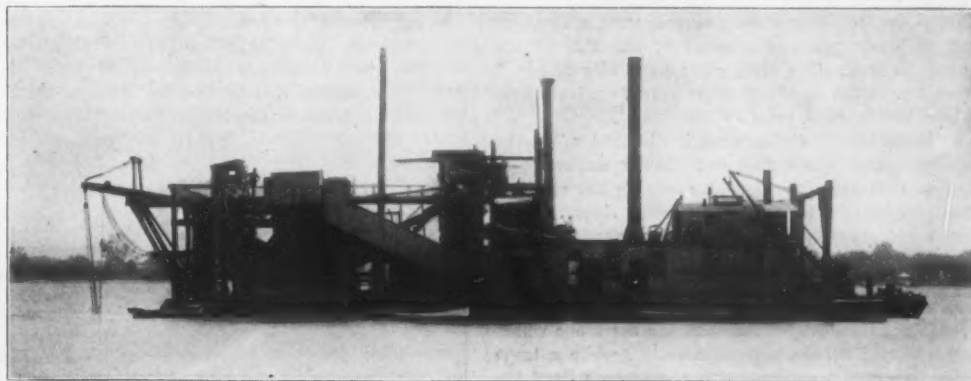
The River & Harbor Improvement Co. agreed to get this stone for the navy yard job and were assisted in so doing by the Eastern Sand Co. The work consisted of heavy masonry, such as the building of abutments and docks. Because of the success with which the work was completed at the League Island Navy Yard, contractors of Philadelphia have taken kindly to the use of pebbles and

today there is a splendid market for this material in Philadelphia.

There are some large boulders to be found in the bed of the river, and as these are not permitted to be thrown back they are lightered to docks, where crushing machinery is installed, and reduced to

materially improved and is today in a healthy condition."

In the Delaware river, extending for many miles both north and south of Philadelphia, are to be found dredges and barges of the various producing companies of Philadelphia. The Hainsport Mining



THE "NEW VAN BRUNT" SAND DREDGE OF THE VAN BRUNT CO

marketable sizes. There are approximately 1,800 tons of these boulders reduced to the commercial size every day, ranging from three-quarters to one and one-half inches.

One of the large distributors of sand in the Philadelphia market is the Eastern Sand Co., of which Horace D. Fry is general manager. In speaking of the sand that enters the Philadelphia market, Mr. Fry says: "Our sand is all river dredged and thoroughly washed and screened before being placed upon the market. During the past nine years the Philadelphia market for sand and pebbles has been

& Transportation Co. operates three dredges, one sand dredge with a capacity of about 1,200 to 1,500 cubic yards daily. A stone dredge operated by this company has a capacity of from 3,000 to 4,000 cubic yards of stone and gravel per day. The third dredge is not in operation at the present time. A fleet of forty barges and three tugs are used to convey these materials to shore. This company also operates a large gravel plant on the Rancocas creek, which empties into the Delaware river about three miles above Market street, Philadelphia. This material is taken from the bank.

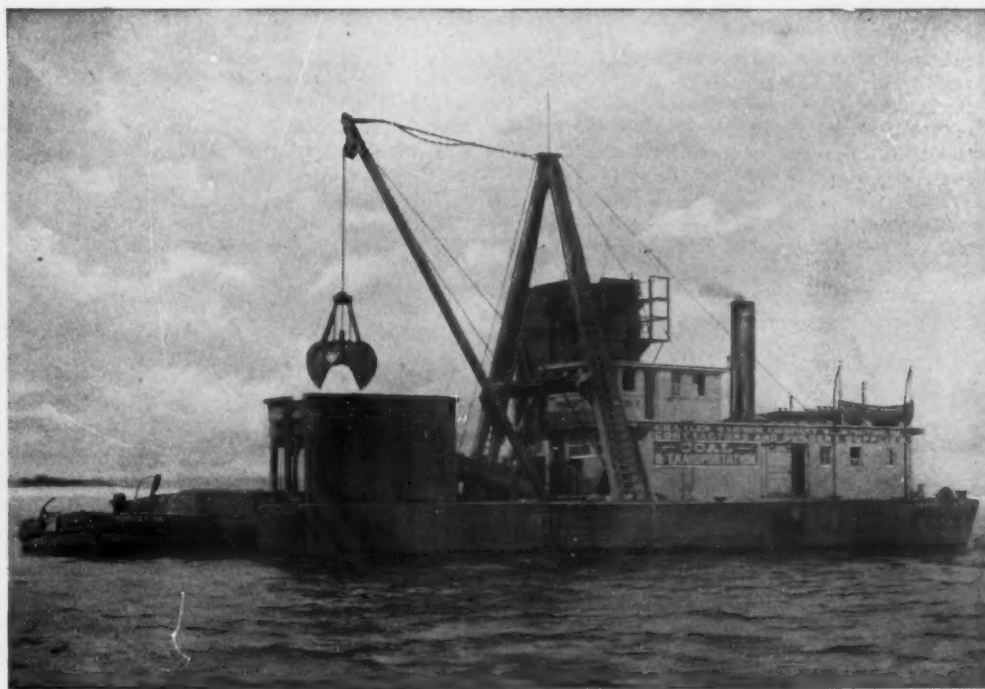
The National Dredging & Lighterage Co. operates two stone and one sand dredge. The stone dredges have a combined capacity of from 2,500 to 3,000 cubic yards daily. The sand dredge is capable of producing 1,800 yards. These three dredges are all operated in the upper Delaware river. Two tugboats and a fleet of 20 barges are in constant use by the National Dredging & Lighterage Co.

The Philadelphia Transportation & Lighterage Co., in addition to being engaged in the conveying of other commodities on the Delaware river, operates a dredge in conjunction with a tugboat and 12 barges. While the dredge is not as large as some of the others operating in the river, it is capable of producing 1,000 yards of material.

The Van Brunt Co. operates a dredge with a daily capacity of from 1,200 to 1,500 cubic yards and has sufficient barge equipment to take care of its own output.

All of the above mentioned dredges are operated in the upper Delaware river about 28 miles from Philadelphia and in the vicinity of Bordentown, N. J.

The Charles Warner Co. operates its dredge "Phoenix" at the head of the Delaware bay and in the lower part of the Delaware river. The dredge is equipped to handle sand and small sizes of gravel. Sand is removed from the river bottom by means of a two-yard orange-peel bucket and is dumped into an elevated hopper. From the hopper it is washed through a revolving jacketed screen, which



WARNER'S "PHOENIX" SECURING BAR SAND FROM DELAWARE BAY.



PART OF NATIONAL DREDGING & LIGHTERAGE CO. EQUIPMENT. LEFT—SAND DREDGE "JACKSON." RIGHT—STONE AND GRAVEL DREDGE "ARIUS."

separates the gravel from the sand and washes out the mud, discharging the clean sand to the boot of an elevator. From this point the sand is elevated to a chute, down which it slides to the barge, which is tied up alongside of the dredge.

The fleet of barges in active operation numbers 10, each one having a capacity of about 325 cubic yards of sand. The dredge has a capacity of about two barges per day, 650 cubic yards, equivalent to about 900 to 1,000 tons.

The majority of this sand is disposed of in the Philadelphia, Wilmington and Chester markets.

The Delaware River Sand Dredging Co. operates two dredges in the upper Delaware river, with a combined capacity of about 800 cubic yards per day. In addition to this they operate about four or five barges.

Some of the sand and gravel produced in the Delaware river is sold direct to the numerous wharf dealers in Philadelphia and vicinity, while a large quantity of it is sold through the Eastern Sand Co.

Heretofore the sand and gravel producing season of the Philadelphia market opened about March 15 and extended actively to July 4. Sept. 1 the market would reopen and remain busy until the close of navigation about Dec. 20, leaving the months of July and August to be supplied by materials produced during the spring months. In the last few years, however, there has been a constant demand for materials throughout the entire year, due largely to concrete construction and the possibility of all-year work in this particular line.

NEWS FROM THE FIELD.

The United States Government has built an incline at Carrollton, Ky., from the gravel pits of the Carrollton & Worthville Railroad Co., to the river, so that cars may be loaded onto a track barge and towed to the site of Dam No. 39, which is under construction in the Ohio river. James Gayle, president of the railroad which owns the gravel pits, said it was the only incline between Louisville and Cincinnati that permits transferring cars of material to the dam site without breaking bulk.

The Moraine Gravel Co., of Plymouth, Wis., has been installing extensive new machinery at its prop-

erty in order that everything may be in readiness for the spring trade. The gravel will be dug, washed and sorted in one handling.

Saratoga Sand & Gravel Co., Albany, N. Y., has increased its capital from \$5,000 to \$10,000.

Great Western Silica Co., Tacoma, Wash., has been incorporated; capital, \$1,000,000; W. S. Meacham, 609 Provident building, and others.

At New Castle, Pa., George T. Weingartner, J. Clyde Gilfillen and J. Roy Mercer have organized the



SAND DREDGE "RELIANCE" OF THE NATIONAL DREDGING & LIGHTERAGE CO.

Bessemer Loam Sand Co. and will have a large operation near there.

The Parkersburg-Marietta Sand Co. has put in a new concrete foundation at its plant at Parkersburg, W. Va. Work had to be suspended last week owing to the rise in the Ohio river.

The Allegheny River Realty Co. is arranging to conduct a big sand and gravel operation near Kittanning, Pa. It will take its sand and gravel from the Allegheny river near that place and will ship it to both local and distant points. A substantial boat landing of concrete construction is now being built and the entire plant will be operated by electricity.

Memphis, Tenn., Dec. 17.—The Union Sand & Material Co., Tennessee Trust building, reports that

the market on sand supplies is about as usual for December, though the recent heavy snow and bad weather give a greater degree of interruption to building and tends to make less active a very quiet market. The situation on the river is about normal. The Kavannaugh Sand Co., also in the Tennessee Trust building, is operating two yards with splendid equipment at both and find the situation quiet at this time, with prospects ahead bright.

New Plant With Large Storage Capacity.

Illustrated on this page is a plant recently installed at Acituate, Mass., for the Boston Sand & Gravel Co. This installation is particularly interesting on account of the exceptionally large storage capacity, 35,000 tons, and the very low cost of operation, which averages approximately four and three-fourths cents per ton, covering cost of labor, power and incidental supplies.

As a means of excavating and transporting the material to the preparation plant, there is provided a No. 4 Type D cable excavator, having a two and

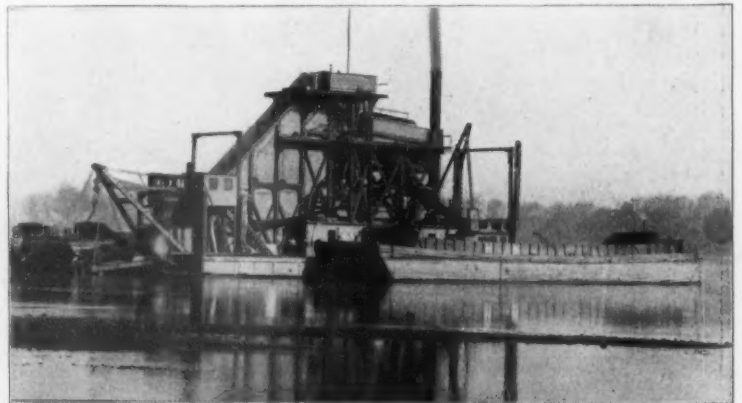
one-half cubic yard bucket, and working on a span of 1,000 feet. This excavator delivers the raw material at the top of the plant, which is 130 feet high. From the receiving hopper the material passes by gravity to crushers, screens and washery, and is delivered after being sized into storage piles at an elevation of about 50 feet above the surrounding surface of the ground.

Under these storage piles there is provided two reinforced concrete tunnels, about 30 feet apart. Each of these tunnels is equipped with a 30-inch belt conveyor for delivering the prepared material on the vessels. The combined capacity of these two conveyors is about 1,000 tons per hour.

The Boston Sand & Gravel Co. has a very efficient fleet of steam lighters, enabling from 5,000 to 7,000



SAND DREDGE "INDEPENDENCE" OF THE HAINESPORT MINING & TRANSPORTATION CO.



STONE AND SAND DREDGE "NEPTUNE" OF THE HAINESPORT MINING & TRANSPORTATION CO., RECENTLY DESTROYED BY FIRE.

tons per day to be carried from the above storage to market. Its deposit at Acituate is practically inexhaustible, and The Cable Excavator Co., of Philadelphia, Pa., is now engaged in enlarging the plant, which is to have an ultimate capacity of 3,000 tons per day.

The plant is operated by electric power throughout, there being provided independent motors, furnished with each machine, which has proven to be the ideal arrangement for this kind of equipment.

The Cable Excavator Co. is a pioneer in the slack cable excavator field. It recently issued an elaborate booklet pertaining to the Hadsel patented slack cable excavators for general excavating, such as railway and canal work, quarry stripping, sand and gravel washing, screening, loading, etc. Illustrations are shown of the different types of machines manufactured by the concern, with brief but concise descriptive matter of some of the installations which are in successful operation throughout the United States and Canada.

In addition to the types A, B and D excavators, the company manufactures the Parrish flexible arm shaker, which consists of a flexible wooden arm, connected to the eccentric strap at one end, and at the other rigidly bolted to the shaker frame. It is claimed that the flexibility of the arm does away with the necessity for any bearings of any kind at the shaker end of the arm.

The concern also manufactures steel Champion rock crushers, the Champion elevator for special work, in which belt elevators or conveyors, both concave and flat, can be furnished; also the Wood rock drill, which is made in eight sizes, ranging from the little drill which will work only up to a four-foot hole to the big one which is good for 50-foot holes; class D center crank engine; also Standard wire rope fittings and Standard hoisting rope.

The company maintains a corps of engineers continually for working up special equipment, which will be placed at the service of its customers for the asking.

Plant Resembles Collection of Cocoons.

Upon seeing a cocoon, no one without previous knowledge would suspect what a wealth of beautiful coloring the butterfly would bring forth. The long, low, cocoon-like collection of structures



COCOON-LIKE STRUCTURES OF RICKETSON MINERAL PAINT WORKS.

shown in the picture, are part of the plant where are manufactured the famous Ricketson "Red Brick Brand" Mortar Colors, which for 25 years have been satisfying the demands of the building public. The plant lies in Milwaukee's busy Bay View factory section. Here the raw ores are refined and purified to the famous Ricketson standard—99.4 per cent pure. Here by the separation of all unstable oxides, are imparted those notable Ricketson qualities which lead to that popular descriptive slogan, "They never fade." Here it is ground to that impalpable fineness which makes Ricketson's colors mix so easily and go so far.

But the cocoon is growing too small for its contents. Even now business demands have led to plans for enlargement and it is expected that several notable additions will shortly have to be made to the plant.

The Youngstown (Ohio) Construction Co., H. M. Reed, secretary, will, it is said, develop sand and gravel property soon.

It is reported that the Mississippi Sand Co. is making preparations to install a sand and gravel yard at Upper Alton, Ill. Shipments are to be made over the C. & A. railroad via East Alton.

Kansas City, Mo., Dec. 19.—Judge H. Smith, of the Wyandotte county division of the Federal Court, appointed Wm. T. Hartley receiver for the Kaw River Sand & Material Co. The receivership was

asked by Laura A. Hill, Louise Mathers and Louis Weisbrod. The company had issued 500 shares of stock and is capitalized at \$50,000.

Eighth Chicago Cement Show.

Poverty is largely a matter of mental attitude. Especially is this true in town and county construction where often a niggardly policy prevents real success and causes greater losses, due to inefficient operation with old and poor equipment, than the amount of necessary investment to obtain modern equipment and consequent lowered cost of work. But this lack of appreciation of the economy of investing in equipment, good for many years of service, has caused the entire loss of goodly sums in excess labor which is not represented in additional street improvements but has been absorbed by the inefficiency of operation.

These truths are brought out strongly to a careful student at the cement shows. The manufacturers are quick to sense the needs of the industry; to put forward devices for the cheapening of work; but these machines and materials are not to be had at a price as low as the older makeshifts. For every advance it is necessary to pay. But the economy of the whole operation is increased by a heavier investment and an adherence to old practices is a pure waste, an inexcusable error. It is so big and all-embracing in its scope that the general building contractor will find his field adequately covered. The small town contractor whose work is largely residence and store foundations and sidewalks will find equal inspiration in the exhibits, for methods are developing as fast, perhaps, for handling this class of construction as for the bigger and more ambitious work.

A tendency of modern times is to scrutinize more carefully all materials of construction and to subject materials, once received on faith, to analysis which will insure the highest uniformity. This careful scrutiny is being very widely applied today to aggregates. It would seem farcical to apply careful tests to cement, only to mix it with sand and gravel of unknown constitution and doubtful quality. Each year has seen at the cement show an increasing number of devices for washing and screening sand and gravel, and the importance of this is being realized more and more each year. The study of these devices at the show will often indicate to producers and dealers in aggregates ways of obtaining an increased price for a higher grade material. It behooves material men to study the problem and anticipate the demands of the engineering profession.

Coincident with the Eighth Chicago Cement Show will be conventions of the American Concrete Institute, the National Builders' Supply Association, the Illinois Association of Municipal Contractors, the Illinois Lumber and Builders Supply Dealers' Association and the American Concrete Pipe Association.



PLANT OF THE BOSTON SAND & GRAVEL CO., ACITUATE, MASS.

CLAY PRODUCTS

Clay Workers' Conventions.

National Association.

Detroit brickmakers are working to give the clay-workers who attend the National Brick Manufacturers' convention, in February next, a good impression of their city. The entire week of the 15-20 will be devoted to the deliberations of the brick manufacturers and to their entertainment.

Iowa Manufacturers.

The Iowa Clay Products Manufacturers' Association will hold its annual convention in Ames, Iowa, Jan. 12, 13 and 14. The sessions will be held in Engineering hall, Iowa State College. Owing to the fact that hotel accommodations in Ames will be inadequate to house the visiting delegates, arrangements have been made for providing rooms in the campus buildings. A splendid program has been prepared with special attention to the marketing of clay products. President B. C. Keeler will open the convention with an address dealing with the best method of educating the farmer in the qualities and uses of burned clay. Secretary C. B. Platt has issued invitations to all clayworkers of the state to attend the convention regardless of whether or not they are members of the association.

Northwestern.

The annual meeting of the Northwestern Clay Association will be held at Minneapolis, Minn., on Jan. 19 and 20. The association has been carrying on an active campaign to secure a larger membership throughout the Northwest, and indications are favorable for a good meeting in January.

Canadian National.

The Canadian National Clay Products Association will hold a convention at the King Edward hotel, Toronto, Ont., Jan. 26-28, 1915. The following speakers will be on hand: Dr. A. C. McKay, principal of Toronto Technical Schools, "Toronto Technical Schools and Their Relation to the Manufacture of Clay Products;" W. W. Smith, Shallow Lake, Ont., "The Making and Burning of Drain Tile;" A. F. Greaves-Walker, manager Sun Brick Co., Toronto, "Kiln Kinks;" E. W. Knapp, "Possibility of Manufacturing High-Class Paving Bricks in Ontario;" Andrew Kruson, "Cheap Glazes for Use on Ontario Clays and Shales;" Philip W. Green, B. A. Sc., A. M. Can. S. C. E., "Standardization of Clay Products from an Architect's Point of View;" Jno. S. McCannell, president Milton Pressed Brick Co., Milton, Ont., "Steam Shovels for Handling Shale and Clay;" W. W. Pearse, city architect for Toronto.

The officers of the Canadian National Clay Products Association are: Wm. H. Freeborn, past president; Chas. A. Millar, president; Henry Stevens, first vice-president; John S. McCannell, second vice-president; J. Edward Frid, third vice-president, and Gordon Keith, secretary-treasurer.

Wisconsin.

The next annual meeting of the Wisconsin Clay Manufacturers' Association will be held in Milwaukee, Wis., February 4 and 5, 1915. The headquarters will be either at the Republic house or at the St. Charles hotel. Further information may be secured by addressing S. Weidman, secretary, Madison, Wis.

Illinois.

Announcement is made of the coming convention of the Illinois Clay Manufacturers' Association, which will be held at the New Leland hotel, Spring-

field, Ill., Feb. 8, 9 and 10, 1915. Special attention will be given at this convention to the problem of cost accounting. It is expected that experts on this subject will address one or more of the meetings. Consideration, however, is also to be given manufacturing and selling problems.

Milwaukee Clay News.

Milwaukee, Wis., Dec. 19.—Various brick manufacturing concerns about Wisconsin are now overhauling their plants and installing new equipment in order to be in readiness to handle the big spring business that is expected. Stocks carried over are far from being large, and it is estimated that the output during the coming season will have to be enlarged. Local jobbing houses, including Ricketson & Schwarz, say that the demand for brick, both for building and paving purposes, has been good during the year just closing, and that sales will show a gain over 1913, despite the fact that building operations showed a falling off.

The Jefferson Brick & Tile Manufacturing Co., of Jefferson, Wis., sustained considerable loss recently, when a carload of new brick-making machinery, just arrived in Jefferson, was buried under the wreckage of 12 freight cars in a bad wreck which occurred at the depot.

The Whitewater Brick & Tile Co., of Whitewater, Wis., recently organized in that city, is progressing favorably with the erection of its new plant, a portion of which it hopes to place in operation this winter. J. G. Werner, general manager of the Whitewater concern, has resigned, and President Zuill will now be in general charge.

San Francisco Clay News.

Frank and T. B. Craycroft, of the Craycroft-Herold Brick Co., Fresno, Cal., were shot and seriously injured in the office of the company in the Griffith-McKenzie building, on Dec. 10, by W. Y. Johnston, a brick contractor on whose property the Craycroft-Herold company has filed a lien. A few moments later Mr. Johnston shot himself, dying almost instantly.

L. R. McKenzie, sales manager for the California Brick Co., of San Francisco, has returned from a trip to the East with his bride, having been married during his absence.

The San Francisco board of supervisors have appropriated money for the repaving of one of the steeper blocks on Powell street with hillside brick.

NEW INCORPORATIONS.

The Dias Brick Co., Athens, Ohio; capital, about \$175,000; applied for charter; Mr. McCarthy, of Toledo, Ohio, and others.

J. W. Barnett, Planters' Trading Co., Wausau, Fla., and others will establish a brick plant.

Hard Stone Brick & Tile Co., Benjamin M. Mitchell, 9 South LaSalle street, Chicago, Ill.; capital, \$60,000.

Macon County Brick Co., Oglethorpe, Ga.; capital, \$100,000; J. H. Oxford, J. M. Cobb, J. T. Lee and T. H. Rains.

The International Brick Co., El Paso, Tex.; \$250,000 capital; build plant with daily capacity of 350 tons of brick, tile, etc.

News From the Field.

The Southern Sewer Pipe Co., N. Birmingham, Ala., will reconstruct its plant recently burned.

Stevens Bros. & Co., Stevens, Ga., manufacturers of sewer pipe, fire brick, etc., will enlarge its operations.

The Coshocton Brick Co., Coshocton, Ohio, has remodeled its plant and will hereafter make only paving brick.

Maryland Coal Co., 1 Broadway, New York, N. Y., contemplates prospecting Mt. Savage fire clay; may fully develop.

The Eastwood Ferry Brick & Tile Co. contemplates constructing a brick and tile plant at Sebree, Ky. The estimated cost is \$10,000.

The Westfield Brick Co., of Westfield, Mass., filed a bankruptcy petition recently. The schedule showed liabilities of \$107,000 and assets of \$39,700.

At Lock Haven, Pa., the Penn Clay Co. is being organized by Michael Dempsey, George Balz and others, of that place, and will quarry clay on a large scale.

The Wooster Shale Brick Co., of Wooster, Ohio, is increasing its capital from \$150,000 to \$250,000 in order to extend its operations. W. R. Barnhart is president.

The Bloomsburg Brick Co., whose plant at Bloomsburg, Pa., was burned September 8, has rebuilt its plant and will be in running order again by the first of the year.

The West Point brickyards have been sold to Willis & Thompson, of Royersford, Pa., who will operate them in the future. The sale includes a 23-acre tract of land.

The La Bolsa Tile Co., Huntington Beach, Cal., will shortly enlarge its plant and also may later install machinery for the manufacture of salt glazed vitrified sewer pipe.

Cumberland Granite Brick Works, Cumberland, Md., will remodel plant and convert into red brick factory; build kilns to burn vitrified brick under new patented process.

The Sacramento Clay Products Co., N. Sacramento, Calif., is engaged in extensive plant improvements, including the installation of large clay bunkers and automatic drag line clay conveyors.

The Keystone Brick Co., of Philadelphia, Pa., has purchased a tract of land, 36 acres, at Comly and Second street pike, with a frontage on the Pennsylvania Railroad. The land sold for \$1,500 an acre.

Clay Tile Makers Organize.

The clay tile manufacturers of the country met in Cleveland, Ohio, on Dec. 2 and organized as the Hollow Building Tile Manufacturers' Association of America. The officers elected are as follows: President, J. A. Maahs, secretary, treasurer and general manager of the Pennsylvania Fireproofing Co.; vice president, W. C. Denison, president of the Ohio Clay Co.; treasurer, R. E. Whitacre, president of the Whitacre Fireproofing Co.; secretary, J. W. Rollinson, Cleveland manager of the National Fireproofing Co.

The permanent headquarters of the association will be in Cleveland, although it is planned to hold regular monthly meetings in different cities. The association's annual meeting will be held on Jan. 12, 1915, but the place of meeting has not yet been selected.

With the QUARRIES

The Problem of Location and Stripping.

BY R. F. RUCKER.

The item of stripping waste material from the surface of stone ledges in quarry operation is of vital importance in the economy of stone production, and in the light of actual experience has determined the success or failure of many enterprises involving the production of stone in commercial competition. Before the advent of Portland cement manufacture in America, broken stone quarries producing daily more than a few hundred tons were rare, and the area, within which the selected strata were to be worked, usually showed many outcrops with negligible overburden, any one of which contained stone enough in sight to supply the demand for unlimited time. The problem, therefore, of quarry site selection involved only quality and accessibility, with very little consideration given to the possibility of the opening developing beyond the area of exposed ledges.

These determining factors of quarry locations in the early days were the same which govern at present. However, the additional considerations of large tested area, its availability for present and future uses, track and building sites, the possibility of damage to surrounding property and population as a result of the hazard of the operation, drainage and the method and manner of waste disposal in the larger operations of today are of even greater importance than accessibility and transportation, for where these factors are secured the enterprise is of possible permanency, and difficult and expensive problems of road building are permissible.

The stripping problem is, next to quality and market for the product, the most important item in consideration of a quarry location for the production of any character of stone. This is probably less true of dimension stone quarries than those producing broken stone for the reason of the greater value of the product, but the consideration in general applies.

The history of Portland cement in America, from its beginning in the natural cement stone area of the East Coast to its development into the limestone-clay areas of nearly every state in the Union, is well known, and it is to this great industry that credit is due for the scientific methods now employed in large broken stone quarry operations, and it is to this same industry, though of a most successful financial history in general,

that the stripping problem has come as a bitter experience; in a few instances to the point of failure of the enterprises.

The general method of waste disposal in the small quarry operations, before the coming of cement manufacture, was to throw back the small quantity encountered into the quarry opening, or earlier still, pile it back from the face in heaps, at such distance as was thought sufficient for generations to come. Such quarries produced dimen-



STRIPPING MATERIAL, LOADED BY STEAM SHOVEL, BEING DUMPED FROM WOODEN TREESTLE.

sion stone for building purposes, for fluxing, for lime burning, and in a small way for macadam road building, and no thought was given to development largely beyond the present production quantity. When the use of cement became general the use of limestone and building stone in construction work diminished and many quarries, producing stone for such purposes, were sold to cement manufacturers. In this way many very good quarries for small production came into the hands of industries requiring very large productions, and soon presented stripping problems which were appalling to these industries even in their early history, when exceptionally high prices for their products prevailed. Some of these enterprises have extricated themselves from apparently impossible economic situations by fortunate financing, which provided funds for heavy investment in stripping equipment, involving water supply sites, dams and increased land area and the courage to risk such unexpected investments. However, ingenuity, courage and plenty of capital will not solve the problem in all cases, for there is a limit to the amount and character of waste which may be removed even by the latest and most economic methods.

In the selection of a quarry location, assuming the general area from which the market to be supplied is determined, the very first information to be gotten is the quality of the different outcrops, and the selection of all which are of desired quality, by hand sampling. These should then be drilled and sampled to complete depth of ledge, analyzed and the entire length and width of stone area so drilled that samples may be had which will thoroughly determine quality at all points. If the quality proves satisfactory, then the amount of stripping per foot of good stone available underneath is the next problem for solution. There are many details which will effect the problem of determining the limit to the amount of waste which may be handled in each special case, and

a successful solution may not be quickly determined. In the outset it must be realized that in any well-settled community in this country a deposit of good-quality stone suitable for industrial purposes is valuable, when properly opened and located on a railway or in territory accessible to one; therefore, it is wise to select a location where the stone lies in considerable unbroken body, so that in case the enterprise originally promoted fails of success or of continuance the site will be available to others engaged in enterprises in which such material is used.

In view of the above facts, the location must be considered in light of available area for disposing of waste, and of the best possible methods of its disposal. Upon the method selected as most suited to the case in hand will depend the amount of waste which may be removed per foot of stone available below, for among the recognized methods of stripping there are those of graduated costs per unit removed, from very low to very high. In general, the topography of the site and thickness and character of waste strata will determine the best method to be used in the judgment of an experienced operator, but the largest experience suggests the greatest caution and serious consideration before a final decision is made in method or combination of methods. Further, it can be stated that the waste material may not be more in quantity than one-third the available stone for cement manufacture, fluxing, and other commercial uses, or more than one-fourth the available stone for lime burning and building stone purposes.

With such proportions as above existent, the most economic method of waste disposal, so far as alluvial portion is concerned, is hydraulicking, in case that method is available through the presence of sufficient water, proper drainage and disposal area. In case of hydraulicking, the usual method is to discharge the muddy stream into a creek or river, where permitted by authority, or in settling basins made by damming low ground in quarry territory, or in the worked out portion of



HYDRAULIC STRIPPING OPERATIONS ON DIRT LEDGE 20 FEET HIGH.



VIEW SHOWING LARGE WELL-HOLE BLAST FROM A 70-FOOT LEDGE OF LIMESTONE.

the quarry itself. This last is not good practice, unless the quarry floor is of worthless formation and the space not needed for present or future operations. For successful hydraulicking, the surface should not be flat, and as little as one foot of dirt may be economically removed by this method.

It is rare that the ledge of desirable stone may be completely cleaned by water and other methods must be used to finish the work. The steam shovel, in connection with wagons, trams (rail or aerial), is the next most economic method of stripping waste, either wholly or after hydraulicking, and in large operations the steam shovel is almost invariably employed to remove the hard material unusually present overlying the good stone.

It is a fortunate quarry location which has a cap rock overlying the valuable ledge and limiting in a definite horizon the height of stone material. In fact, few stone ledges possess such a stratum at any reasonable proximity to the surface, and almost invariably there is a certain thickness of disintegrated or partly disintegrated stone, of the same or different formations, lying above, which must be removed. Should the material happen to be residual clay, combined with detritus from higher elevations or glacial material, the latter of which is usually of igneous origin and therefore very hard, the hydraulicking method would likely prove ineffectual. Such material is practically insoluble and so tough that water will have little effect toward its removal. Such a situation resolves itself into a steam shovel or hand handling problem.

In certain situations, where the topography of the surface is made up of a series of mounds with no general and sufficient fall which would allow of hydraulicking, nor a definite good stone horizon which would allow safe track foundation for steam shovel operation, the problem becomes one of team and hand labor. This, of course, involves the greatest expense of the various methods of stripping, but here again good judgment will dictate a combination of team and hand labor, which will secure wonderful economy in operation, as compared with the use of either alone. Wheel scrapers and teams, under possible operating conditions for them, will remove material to a distance of 500 feet at one-half the cost per unit of hand labor and wagons. At greater distances, the advantage is questionable and depends largely upon the topography of the surface, over which the material must be moved. Where hard material is encountered, these methods must be combined with blasting and drilling, and often good judgment will dictate the use of hand labor, carts, wheel barrows, or even drags, where the good stone surface is exceptionally irregular, pockety, and contains mud seams.

It will thus be seen, that not only must the amount of stripping be carefully investigated, but also the most economic method available at the site in question for its removal, in deciding the possible and comparative value of any site for profitable operation of a stone quarry.

NEWS FROM THE FIELD.

Great Lakes Stone & Lime Co., Alpena, Mich., has increased its capital from \$1,500 to \$1,750.

Gilmour Lime & Gravel Co., Ltd., care of Robins, Ltd., Victoria street, Toronto, Ontario, Canada, has been incorporated; capital, \$75,000; general quarry business.

The Producers' Ground Limestone Co., Indianapolis, \$50,000; to manufacture and sell limestone in its various compositions; W. H. Dye, A. L. Dye, H. S. Cone.

Kentucky River Stone & Sand Co., Lawrenceburg, Ky., will increase its capital stock to \$45,000 and

enlarge the capacity of its crushed stone plant, which will be electrically operated.

Duluth Crushed Stone Co., Duluth, Minn., has been incorporated with a capital of \$75,000. Incorporators, F. A. Brewer, 2215 East Superior street, and C. D. Brewer, 112 Sixth avenue E., and others, all of Duluth.

W. Scott Longenecker, manager of the Baker Quarry Co.'s quarries at Billmeyer, Pa., was badly injured on November 28 by being caught in the shafting in the engine rooms. His body was badly lacerated but his condition is not thought to be fatal.

The Hydraulic Stone Co., Waynesboro, Pa., has elected these officers for the next year: D. S. Leshner, D. W. Hess, Daniel Hess, J. M. Newcomer, Edward Frantz, H. K. Gearhart and J. H. Gehr.

It is reported that H. R. Kenyon, Manatee, Fla., is interested in the establishment of a rock-crushing plant, to be erected in Manatee, Hammock, Fla.; has purchased stone crushing equipment.

OHIO STONE PRODUCERS TO MEET.

The Interstate Stone Manufacturers' Association will hold its annual meeting at the Virginia hotel, Columbus, Ohio, January 14 and 15. A grand rally of the crusher operators and road builders of Ohio, Indiana and Kentucky is earnestly looked forward to as the matters that will come before the meeting are of vital importance to the men who are interested in the production of crushed rock in this most important section of the country.

No stated program has as yet been issued but the best minds in the business are working on the topics that will be brought up for consideration and discussion.

THE SOURCE OF LIME.

(Continued from page 39.)

this clay cheaply from the adjoining limestone. Silica is both an original and secondary impurity in limestone.

In ordinary hard limestone, it occurs as nodules or masses of chert (flint), or else combined with alumina as clay matter. In soft limestone, such as marl and chalk, silica usually occurs as grains of sand that were introduced during the deposition of the limestone, but certain beds of Cretaceous chalk carry an abundance of chert nodules, notably the chalk deposits along the English channel, and to a less extent in Texas.

Alumina is commonly present in combination with silica as silicate minerals or as clay matter. Iron compounds may have been disseminated with the original sediments, but they have also been brought in by percolating waters. Chemical action between the iron compounds and the calcium carbonate and other minerals has resulted in the replacement of particles of limestone by iron compounds. Sulphur is present in combination with iron as the disulphide, and in gypsum, so that it is not free under ordinary condition. The alkalis, soda and potash, are present in some limestones in small quantities, probably in the form of carbonates and in the clay impurities as silicates.

On the outcrop and next to a cover of residual clay, debris and soil, limestones are generally weathered to varying depths, depending on the physical and chemical character of the stone. Impurities are noted in greater proportion in the weathered rock than in the unweathered, because the impurities are less soluble than the limestone.

A BOX CAR LOADER THAT LOADS LARGE LUMP LIME WITHOUT APPRECIABLE BREAKAGE.



A "MANIERRE" LOADING LUMP LIME IN A BOX CAR

It is the LONG REACH MANIERRE LOADER.

This successful coal loader has solved the problem of loading large lump lime. Do not take our word. Read the proof given below.

The Chas. Warner Co. installed a Manierre loader at their plant at De Vault, Pa., seven months ago. Since that time it has daily loaded large lump lime, hot or cold, into box cars, without appreciable breakage. Few repairs, small cost and the ease with which it is handled, make the Manierre desirable. Write for further information.

MANIERRE ENGINEERING & MACHINERY CO.
MILWAUKEE, - - - - - WISCONSIN

SAND-LIME BRICK

Annual Convention Held at Dayton

The eleventh annual convention of the Sand-Lime Brick Association was held at Dayton, Ohio, December 8 and 9, 1914. The attendance represented a majority of the concerns who are operating successfully in the manufacture of sand-lime brick in the United States and in Canada. The feeling of the meeting was one of satisfaction with the business of the past season, in spite of the fact that building operations to a great extent were curtailed in the latter part of the year. Some of the Canadian representatives stated that the war, in which their country is deeply interested with the mother country, has had the effect of bringing the big development program throughout the Canadian provinces to a practical standstill, and yet they have been able to run their plants almost full time without accumulating more than a normal stock of brick at their yards.

The meeting was opened promptly on Tuesday morning by President Goho, with a few appropriate remarks, while Secretary William E. Plummer, Jr., put the finishing touches to the enrollment which resulted in finding the following members in attendance:

Attendance.

G. Silvester, Calgary Brick Co., Calgary, Alta.
H. W. Bedell, W. P. Wilson, West Lake Brick and Products Co., Wellington, Ont.
I. G. Toepfer, Acme Brick & Sand Co., Milwaukee, Wis.
W. K. Squier, Paragon Plaster Co., Syracuse, N. Y.
D. Brown, Gary Granite Brick & Lime Co., Gary, Ind.
W. D. McFarland, Winnipeg Brick Co., Winnipeg, Man.
Warren E. Emley, United States Bureau of Standards, Pittsburgh, Pa.
George S. Hird, Mitchell Lime Co., Chicago, Ill.
Fred K. Irvine, ROCK PRODUCTS AND BUILDING MATERIALS, Chicago, Ill.
L. W. Penfield, American Clay Machinery Co., Willoughby, Ohio.
W. J. Carmichael, American Clay Machinery Co., Willoughby, Ohio, and Composite Brick Co., Jacksonville and Plant City, Fla.
W. E. Plummer, Jr., Buffalo Sand Stone Brick Co., Buffalo, N. Y.
H. F. Allardice, Ottawa Brick Co., Ottawa, Can.
A. K. Walton and S. O. Goho, Hummelstown Brownstone Co., Waltonville, Pa.
W. H. Crume, Roy C. Keiser and G. Crume, Crume Brick Co., Dayton, Ohio.
H. W. Terry and H. D. Robertson, Harbor Brick Co., Toronto, Ont.
John Schultz, Schultz Bros. & Co., Brandtford, Ont.
D. D. Wood, Birdshill Brick Co., Winnipeg, Man.
H. O. Joseph, Grand Brick Co., Grand Rapids, Mich.
J. M. Zander, Saginaw Brick Co., Saginaw, Mich.
John L. Jackson and W. L. Miles, Jackson & Church, Saginaw, Mich.

Secretary Plummer then made his report in detail, which was followed by that of Treasurer Jackson, and these reports were passed to an auditing committee which subsequently reported the balances correct.

H. O. Joseph, of the Grande Brick Co., read his paper entitled, "Brick Making, Old and New." This was a sound, business-like paper, the meat of which was drawn from the experience of Mr. Joseph, who for more than 16 years was engaged in the manufacture of clay bricks, and he has been for the past five years at the head of the Grande Brick Co., of Grand Rapids, Mich., making sand-lime brick. He set forth the selling points of sand-lime brick as superior to those of clay brick in the market for the common grade of material.

Discussing the paper, Mr. Carmichael said that it costs no more to manufacture and deliver larger sized brick of the sand-lime type than it does the smaller sized brick of burned clay. Besides, it is impossible to make clay brick in the common grade uniform in color, in size and of correct shape.

Mr. Jackson remarked that the size of brick cuts very little difference to the selling point, because most of the plants are now using the Philadelphia standard size.

Mr. Wood said that the exact dimensions of sand-lime brick, their uniformity in color and the low percentage of bats are counting with the architects in Winnipeg, and he presumes that the same argument is good elsewhere.

Mr. Squier cited a case in which a contractor had reported to him a saving of 10 per cent in the num-



WM. H. CRUME, DAYTON, OHIO, PRESIDENT THE SAND-LIME BRICK ASSOCIATION.

ber of brick delivered, billed and paid for on a large order, on account of the larger size of the sand-lime brick, where the contractor had figured clay brick of a smaller size, with which he had been previously familiar. This saving naturally resulted in a labor bill, as well as the mortar material, in exactly the same proportion of saving, so that it made an unexpected profit to the contractor, which was argument enough to make him favor the further use of sand-lime brick.

In the afternoon, in spite of threatening rain or snow, the delegates accepted the invitation to visit the plant of the Crume Brick Co., which is located several miles south of the city on the old Miami and Erie canal. There was some bad going and one or two of the automobiles had difficulty in reaching the towpath adjacent to the plant, but it was well worth the trip; for the Crume Brick Co. operates a sand bank which is just about the most magnificent specimen of a natural sand deposit opened for operation that any of the practical brick makers had ever seen. For 135 feet a solid face of sand towers above the shovellers, who throw the sand upon an endless belt that carries it into the factory. The plant is served by a spur from the Big Four railroad

and has a rate to city delivery of 55 cents for 1,000 brick.

The plant is equipped with a single unit of Kom-nick rotary press with three hardening cylinders. The capacity is 23,000 brick per day and the plant is run to capacity; that is, the crew works until the cylinders are all filled, and they generally get this complete in the nine-hour working day.

The lime received in a box car is removed to a brick silo, where the water of hydration is added and fed by means of a wheelbarrow to a wet pan, which prepares the material for the bin that feeds the press. About half a million brick are carried in stock and are sold as common brick in the Dayton market.

The press never lost a stroke nor the well-trained crew a single motion in their operation while the visitors were inspecting the plant.

In the evening the convention assembled in the banquet room of the Algonquin hotel as the guests of the Crume Brick Co., and there were plenty of good things to eat and drink, with floral decorations and a big boquet in the center expressing the appreciation of the visitors to the Crume Brick Co., which was an impromptu subscription affair. Everybody feels at home at a sand-lime brick banquet and this was no exception in that respect. Crume, Jr., who was attending the convention for the first time, proved to be somewhat of an entertainer; he even beat the man that ran the orchestra at making the music, and Brother Plummer introduced all the new steps that have been added to the tango at Buffalo and Niagara Falls during the past summer.

About the time no one could eat any more Mr. Crume introduced a personal friend of his, Judge J. R. Baggot, of Dayton, who, he said, was a first-class talker. Now Judge Baggot was more than that and he soon had every man around that banquet board claiming him as a friend and companion, for he talked about business and many other things in a very pleasant vein, but at the same time with a whole lot of good solid pith woven therein.

On Wednesday morning the convention accepted the invitation of The C. W. Raymond Co., manufacturers of brick machinery, to visit their plant, and the meeting accordingly adjourned and spent the morning amidst the machinery men. In the afternoon the business meeting was called to order and the following papers were read and briefly discussed: "Brick Specifications and Standards," by W. K. Squier; "Some of Our Competitors," by J. M. Zander; "Reduction of Fixed Charges by Competitive Operation," by W. H. Crume; "Sand-Lime Brick in Europe," by H. D. Robertson, Toronto, Ont., and "Calcium Silicate," by Warren E. Emley. In later numbers of this journal these papers will be published from time to time.

Messrs. Squier, Walton and Jackson were constituted a committee to keep in touch with the sub-committee of the American Society for Testing Materials, having in hand the specifications of building brick.

Messrs. Goho, Terry and Crume were constituted a committee to work out the details of the Official Bulletin, or joint advertising campaign of the association.

The election of officers resulted as follows:

President, Wm. H. Crume, Dayton, Ohio.
Vice president, G. Silvester, Calgary, Alta.
Secretary, H. W. Terry, Toronto, Ont.
Treasurer, John L. Jackson, Saginaw, Mich.

Executive committee: L. W. Penfield, Willoughby, Ohio; W. F. McFarland, Winnipeg, Man.; E. D. Chapman, Minneapolis, Minn.; W. J. Carmichael, Plant City, Fla., and John E. Maher.

Brother Toepfer, of Milwaukee, was on the job early, with red badges bearing the legend "Bright Spot," inviting the convention to meet next year at Milwaukee. Mr. Toepfer, with the characteristic hospitality of his native city, promised everything from beer to brick, including burlesque and the social attractions with which the city abounds. It was the consensus of all that Milwaukee should be the next place of meeting in accordance with Brother Toepfer's cordial invitation.

GYPSUM PRODUCTS

Gypsum as a Fireproofing Material

BY VIRGIL G. MARANI.

[Lack of space prevents the reproduction in full of this interesting article, as published in the November issue of the Journal of The Cleveland Engineering Society.]

At the National Fire Prevention Convention, held in Philadelphia, in 1913, the British Fire Prevention Committee's proposed standards of fire resistance, submitted at the International Fire Prevention Congress in London in 1903, classified as (1) Temporary Protection; (2) Partial Protection, and (3) Full Protection, were adopted. The Gypsum Industries' Association on April 6, 1914, formulated proposed "Standards of Fire Resistance" which not only follow the British principles, but include in these proposed standards the required heat, time and water tests for the full, partial and temporary protection of roof construction, vertical inclosures and the protection of steel members. Tables were prepared from the evidence gained from tests upon gypsum and the standard requirements for all materials as adopted by the American Society for Testing Materials and the National Board of Fire Underwriters. According to the British principles, temporary protection implies resistance against fire for at least three-quarters of an hour; partial protection implies resistance against a fierce fire for at least one hour and a half; full protection implies resistance against a fierce fire for at least two hours and a half.

In deciding upon any material for fireproofing the following should be the required conditions:

Low Conductivity of Heat.

This is an important factor and one of the strongest points in favor of gypsum. The calcination report made by the National Board of Fire Underwriters showed that a six-inch block of gypsum, subjected for four hours to a temperature of 2,200 degrees Fahr., had a temperature of 1,980 degrees one inch back from the face of the fire; 1,255 degrees two inches back; 315 degrees three inches back; 223 degrees four inches back; 211 degrees five inches back from the face of the fire; and at the back face, or opposite side of the block, the temperature was only 208 degrees, thus only nine and one-half per cent of this great heat passed through the six inches of gypsum in four hours.

The reason for this remarkable resistance to heat is due to the chemically combined water of crystallization, which is about 20 per cent by weight. The heat breaks up these crystals and liberates the water, the process being slower as the heat penetrates further into the gypsum. As long as there are any water crystals in the gypsum to be broken up, the material will not warm appreciably above the temperature of boiling water.

Low Amount of Expansion.

There is no appreciable expansion in gypsum when exposed to high degrees of temperature. In the fireproofing of buildings, this is a very important feature, because expansion tends to disrupt or destroy the structure or material by buckling, and in steel frame construction this feature becomes a very serious consideration.

Incombustibility.

Gypsum and gypsum plasters are incombustible.

Lightness.

Since it is generally conceded that every pound

of material added to the weight of a building which is not necessary for strength or stability is detrimental to the structure, the use of the lightest materials for fireproofing should be encouraged, resulting in a saving in the sizes of steel members, the foundations and the cost.

Strength.

The Chicago Board of Fire Underwriters' test of June 22, 1910, made at the Chicago laboratories, on 18 full-size three-inch gypsum partition tile, selected at random from 50 samples, showed an average crushing strength of 12,603 pounds to the tile, or over an average area of 90.2 square inches. The average crushing strength was 139.7 pounds. As the weight of this tile is about 0.28 lb. per square inch on bedding surface, a non-bearing partition of gypsum would have to be about 500 feet high before it would crush of its own weight.

Adaptability.

Gypsum is peculiarly adaptable to any form of construction requiring careful fitting and setting. When used in slabs or tile, these are easily sawn or cut to fit any desired location. The same material can be delivered on the work in plaster form, which requires merely to be mixed with water, after which it can be poured into forms like concrete for the construction of monolithic floor, roof systems or steel protection.

Water Effect.

The underwriters' Chicago tests showed that thoroughly saturated specimens absorbed about nine pounds of water, or 34 per cent by weight. These saturated tile, when crushed, showed a strength equal to over 33 per cent of the dry specimen, and when these tile were allowed to dry in the air at

ordinary temperatures and then crushed, the average strength compared with tile that had never been soaked was 98.7 per cent, practically a return to the original strength of the material.

Corrosion.

The corrosion of metals, protected or unprotected, is still a debatable question, but so far investigation seems to confirm the growing opinion that any attack upon metals covered with the commercial plasters of today is just as likely to be due to acids contained in the protective coatings, improper galvanizing or coating, or to exposure to atmosphere or moisture.

Art Marble in Exclusive Hotel

The illustration on this page shows the use of Hamilton art marble in the St. Regis hotel in Kansas City. The product is a Keene cement and is set upon plate glass. After being allowed to set for 24 hours it is taken from the glass and is given a bath with a patented chemical solution. This solution put on the "marble" is allowed to season for six days, after which it is given a very high polish, by means of machinery. Slabs of any dimension can be made, and by the use of coloring matter practically every form of marble can be imitated. This product costs about 50 per cent less than the natural product, it is claimed, and is considerably lighter. The appearance is very deceiving, and the fact that it was used in the St. Regis, which is the finest family hotel in Kansas City, speaks well for it. It is being made by the Hamilton Art Marble Co., Kansas City Mo.

The plant of the Newark Artificial Stone & Plaster Co., Newark, Ohio, which was badly damaged by fire, will be rebuilt immediately and new machinery installed.



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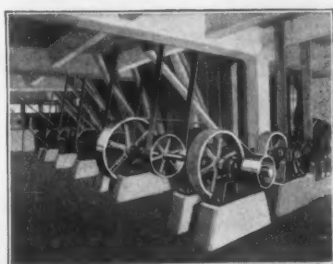
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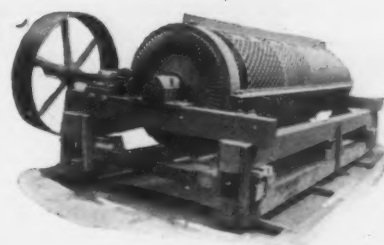
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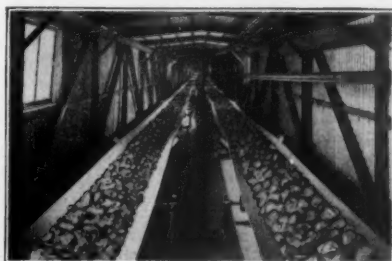
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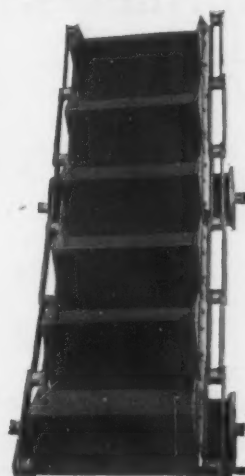
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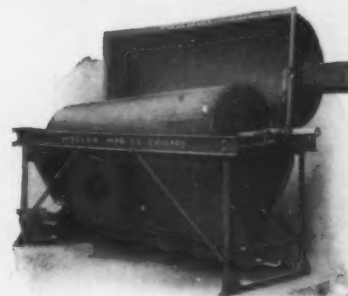


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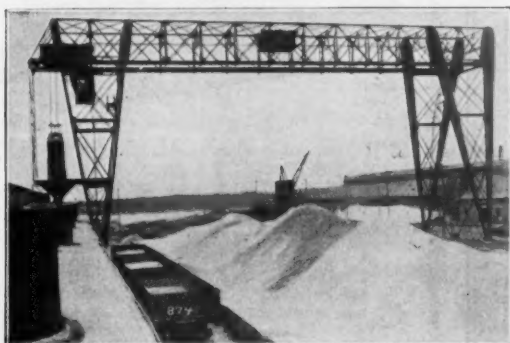
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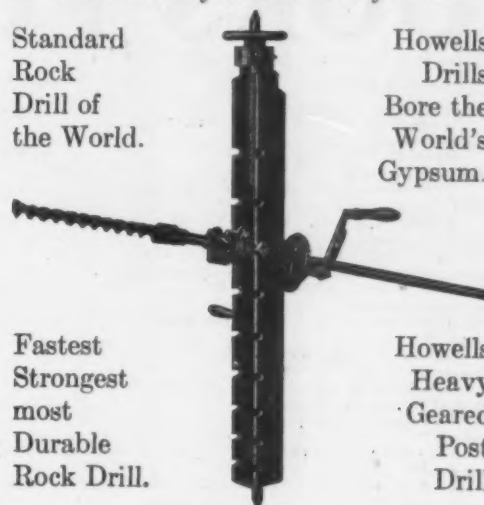
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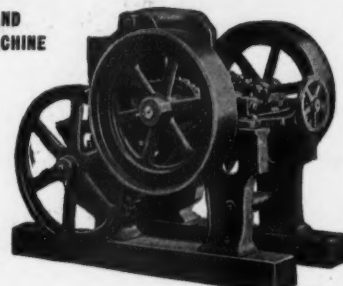
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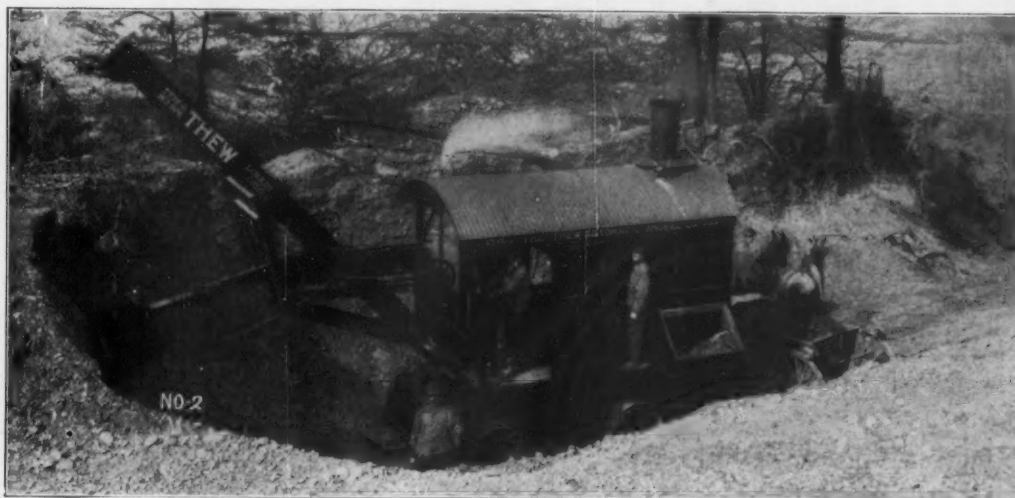
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The green guarantee tag on every bag of Marquette Portland Cement means we have made it better than government specification; as much better as possible.

Marquette Cement Mfg. Co.
1335 Marquette Building
Chicago

Large Outputs Can be Secured with a Small Thew Shovel



Type O Shovel in a Gravel Pit

This Type O Thew Shovel loaded gravel as follows:

DATE	HOURS	CU. YDS.	YDS. PER HOUR
Oct. 10	10	687	69
" 11	6	437	73 (Rain)
" 13	10	875	87
" 14	10	687	69
" 15	10	750	75
" 16	10	750	75
" 17	7½	574	76 (Rain)
" 18	5	422	84 (Forenoon only)

Total
7½ Days 68½ 5182 76

Total yards in contract, over . . 50,000
10 Hour Days operated = 82
Cubic Yards per day = 609

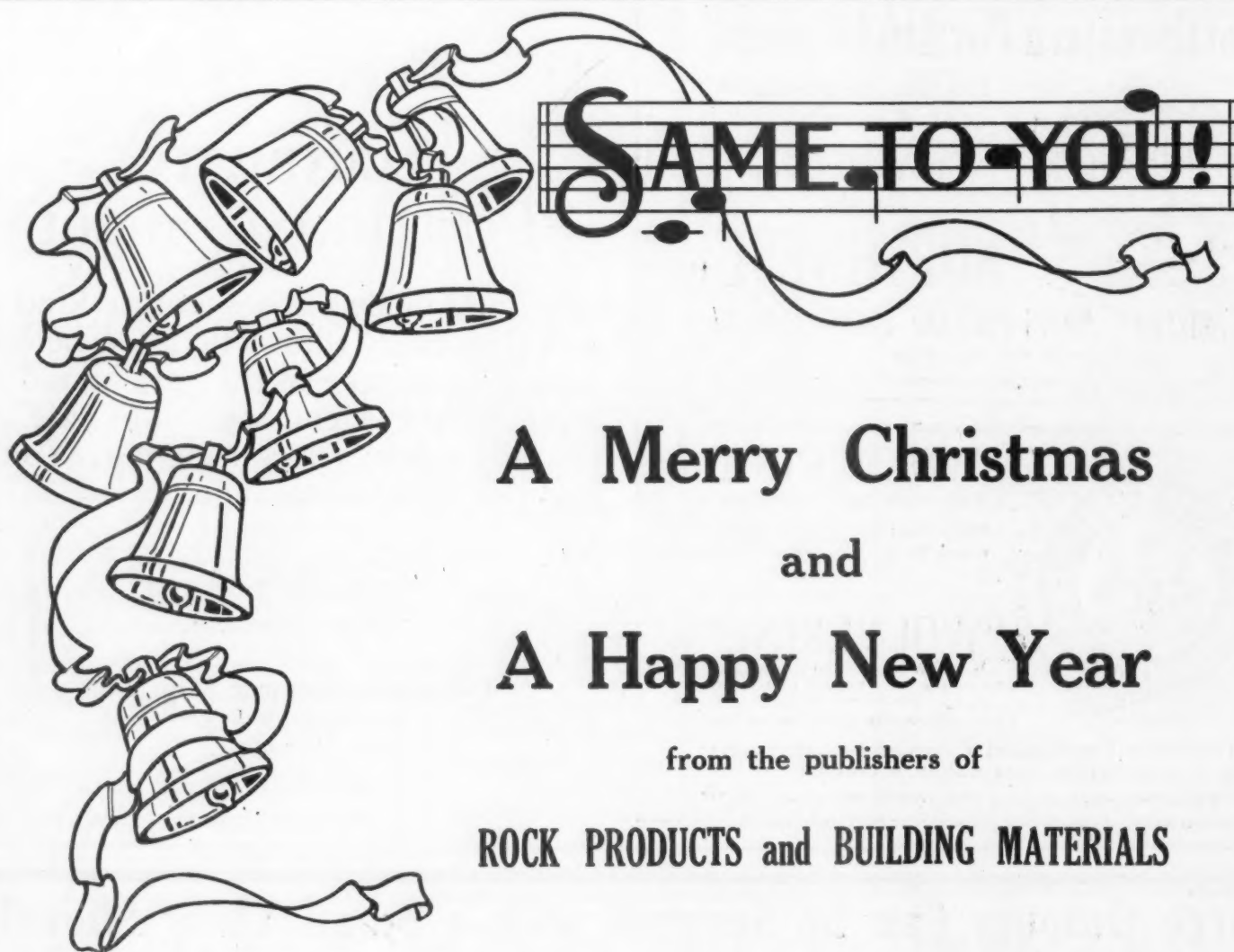
Another Contractor sends us the following results secured with his Type 1 Thew Shovel in his gravel pit:

DATE	HOURS OPERATED	CARS LOADED	CUBIC YARDS	DATE	HOURS OPERATED	CARS LOADED	CUBIC YARDS
Oct. 4	6½	220	1366	Oct. 16	9	224	1175
" 5	10	252	1103	" 19	10	314	1885
" 6	7½	232	1475	" 25	8	216	1158
" 8	5	216	1153	" 28	9½	276	1582
" 10	5	192	1142				
" 12	10	271	1724	Totals 11 days	85½	2605	14,942
" 15	5	192	1179	Average "	7½	237	1,359

Use a Thew. It Pays

THE THEW AUTOMATIC SHOVEL CO.,
LORAIN, OHIO

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



A Merry Christmas
and
A Happy New Year

from the publishers of

ROCK PRODUCTS and BUILDING MATERIALS

IN the pleasure and excitement of the season, don't overlook the fact that you must **immediately** prepare to be properly represented at the

**Chicago Cement Show,
February 10-17, 1915.**

A number of the most important companies have decided that an advertisement in the Daily Rock Products and Building Materials is a necessary part of their proper representation.

**Daily Rock Products and
Building Materials**

Nine issues to be published at National Builders' Supply Association, February 8-9, and the Chicago Cement Show, February 10-17, 1915. Will contain all news of show, daily program, special features, reports of conventions held at this time, etc.

The Daily will be distributed completely at the show and conventions, and mailed to a selected list all over the country.

Readers will include manufacturers and producers of building materials, including cement, crushed rock, sand and gravel, etc., and contractors, architects, engineers, machinery equipment manufacturers.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

THE IDEAL MATERIAL FOR LIGHT CONCRETE WORK, WITHOUT EXPENSIVE FORMS OR STIFFENING CHANNELS

ECONOMICAL

DURABLE

FIRE PROOF

VERMIN PROOF



Note the Strength

at the Ribs

and the Large,

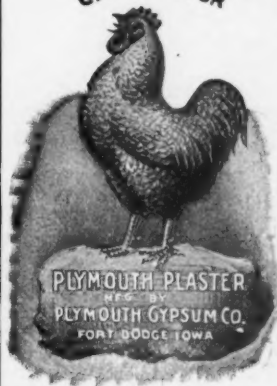
Heavy Plaster Key

Send for Sample and Data Sheet 32—Your line is incomplete without it

THE BOSTWICK STEEL LATH CO.

Niles, Ohio

CROWING FOR



PLYMOUTH PLASTER
WOOD FIBER PLASTER
PLYMOUTH FIREPROOF
PARTITION BLOCKS
SACKETT PLASTIC BOARD
STEEL STUDDING

THE QUALITY BRANDS

WRITE US FOR PRICES AND
ADVERTISING MATTER

Plymouth Gypsum Co.

Fort Dodge, Iowa

Shearer & Mayer (Patented)

Dragline Cableway Excavator

Known for its wide area of operation and efficient excavation of either wet or dry material. Machine is always under positive control of one operator.



SAUERMAN BROTHERS

1140 Monadnock Building

CHICAGO, ILLINOIS

SOME SPECIAL TRAMWAY NOTES

Our Correspondence develops the fact that some points still remain to be made clear.

SINGLE AND MULTIPLE TERMINALS

The impression still prevails that we can load at only one terminal and discharge at only one terminal. On the contrary, when conditions require and by a very simple adaptation the automatic tramway will load at any number of points, either grouped together or scattered anywhere along the line;—and will discharge at any number of points along the line in addition to the final terminal discharge. This therefore enables the material to be dumped to form a long pile or in separate bins for grading.

EXTENSION DUMP TERMINALS

The Lawson Tramway can advance its dumping terminal at will,—an advantage not possessed by any other tramway. For instance, in dumping spoil material, the spoil bank gradually extends itself. By a simple arrangement, the dumping terminal can follow it up a few feet at a time and so carry the spoil bank out to any length. The additional cost is almost nominal.

ANGLES

The Lawson Tramway is practically independent of angles as a restricting condition. To illustrate—we have built three tramways for special service which were continuous;—that is, in which the total curvature was a complete circle, the tramway being, so to speak, a closed circuit.

The arrangement of anchorages is such that no lateral strain whatever comes on the curves. Unlike every other tramway, the additional cost is trifling and no special attendant at the curve is required as in some.

CAPACITY OF CARS

Our Bulletins hitherto have dealt with only one capacity of car, namely,—4½ cubic feet. Experience has shown that this capacity covers 90 per cent. of the various applications. We are, however, manufacturing a standard car containing 10 cubic feet, whose dimensions are 38" x 42" x 12". This car is used for comparatively light material, like coal, earth, etc.

We are also designing a "Jumbo" Tramway in which each car will carry one cubic yard. This is intended for heavy contract work.

SLOPES

All cars can be so modified that they ride horizontally on any slope.

THE COMPLETE TRAMWAY

Unlike any of our competitors we will contract for Tramways delivered and erected complete, including power if desired. We can do this because we are Construction Engineers and not merely manufacturers.

Very Respectfully,

THE AMBURSEN COMPANY (Tramway Department)
61 Broadway, New York.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

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Urschel Bates Valve Bag Co.
West Jersey Bag Co., The.

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Dull & Co., R. W.
B. F. Goodrich & Co.
Imperial Belting Co.
Stephens-Adams Mfg. Co.
Webster Mfg. Company.
Weller Mfg. Co.

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Hocking Valley Clay Co.
Metropolitan Paving Brick Co.

BRICK CLAMPS.

The P. D. Crane Co.

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Harris Brick Co.
Metropolitan Paving Brick Co.
National Paving Brick Mfrs. Assoc.
Thornton Fire Brick Co.

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Hendrick Mfg. Co.
McMyler-Interstate Co.
Owen Bucket Co.
Willis Shaw Mch. Co.

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Dull & Co., R. W.
Sauerman Bros.

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CEMENT, PORTLAND.

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Carolina Portland Cement Co.
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Dexter Portland Cement Co.
French, Samuel H., & Co.
Grant Port. Cement Co.
Kansas City Portland Cement Co.
Lehigh Portland Cement Co.
Marquette Cement Mfg. Co.
Northwestern States Portland Cement Co.
Ohio & Western Lime Co.
Phoenix Portland Cement Co.
Sandusky Portland Cement Co.
St. Louis Portland Cement Works.
Security Cement & Lime Co.
Union Sand & Material Co.
Universal Portland Cement Co.
Vulcanite Portland Cement Co.
Whitehall Portland Cement Mfg. Co.
Wolverine Portland Cement Co.
Woodville Lime & Cement Co., The.

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Jeffrey Mfg. Co.
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Macneal, James B., & Co.
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McMyler-Interstate Co.
McLanahan Stone Machine Co.
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Webster Mfg. Company.
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Robt. W. Hunt & Co.

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McMyler-Interstate Co.

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Bartlett, C. O., & Snow Co.
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Bradley Pulverizer Co.
Butterworth & Lowe.
Ehram, J. B., & Sons Mfg. Co.
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Martin, Henry.
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American Clay Co.
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Meade, H. K.
Sauerman Bros.
Schaffer Eng. & Equip. Co.
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Scioto Lime & Stone Co.
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Kelley Island Lime & Transport Co.
Mitchell Lime Co.
National Lime & Stone Co.
National Mortar & Supply Co.
Niagara Gypsum Co.
Ohio & Western Lime Co., The.
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See Gypsum.

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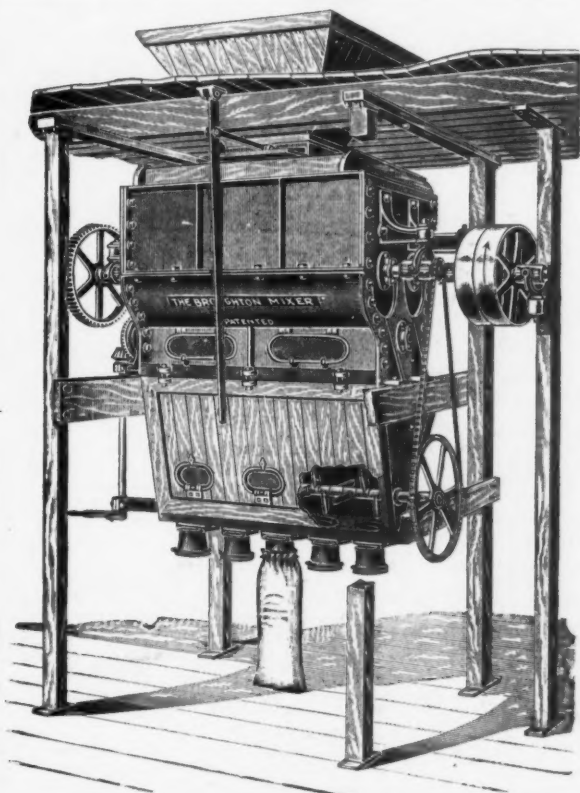
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The most thorough and efficient
Mixers of Plaster, Cement and
Dry Materials. Send for Circular.

W. D. DUNNING, Water St., Syracuse, N. Y.

"A CRACKER JACK"

is what the Dealers—The Users and others say

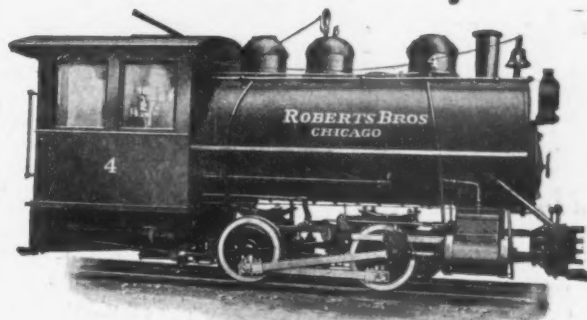


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Special Designs for Special Purposes
Any Size, Any Gauge, Any Weight
Write for Prices and Particulars

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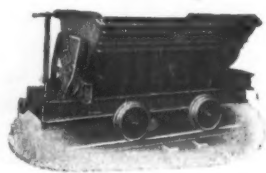
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The Urschel-Bates Valve Bag Company
Toledo, Ohio

[Address all communications to the company at Toledo, Ohio.]

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No. 217-H Rocker Side Dump Car
Also made in end dump. Above
car made for loading with
steam shovel.



No. 805
Dumping Stone Carrier.

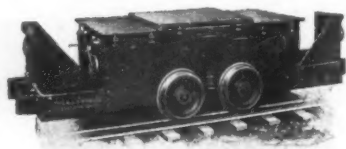
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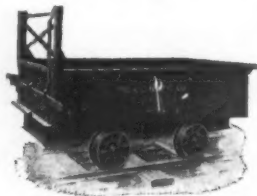
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Where a trolley wire or third rail is undesirable investigate our storage battery locomotives. Made in several styles and sizes. Cars to suit every requirement.

THE ATLAS CAR & MFG. CO.
909 Marquette Road
Department 6
Cleveland, Ohio



No. 5750—Storage Battery Locomotive
made in several sizes.



No. 274
End Dump Quarry Car.

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Carefully selected
as to size.

Best shapes.

Will not break or
flake in Tube Mill.

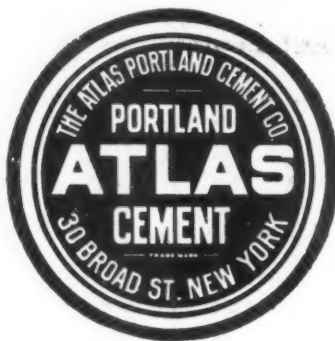
CANADA PEBBLE CO., Limited

Highest Grade Grinding
Pebbles for Tube Mills

General Offices

PORT ARTHUR ONTARIO
CANADA

Concrete for
Permanence



Merry Christmas and a Happy,
Healthy and Prosperous New Year

from

The Atlas Portland Cement Co.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS